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Angular Radiation Models for Earth-Atmosphere System

Volume I—Shortwave Radiation

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Summary

This document presents the shortwave angular radiation models that are required for analysis of satellite measurements of Earth radiation, such as those from the Earth Radiation Budget Experiment (ERBE). The models consist of both bidirectional and directional parameters. The bidirectional parameters are anisotropic function, standard deviation of mean radiance, and shortwave-longwave radiance correlation coefficient. The directional parameters are mean albedo as a function of Sun zenith angle and mean albedo normalized to overhead Sun. Derivation of these models from the Nimbus 7 ERB (Earth Radiation Budget) and Geostationary Operational Environmental Satellite (GOES) data sets is described. Tabulated values and computer-generated plots are included for the bidirectional and directional models.

Introduction

Analysis of satellite measurements for determination of the Earth's radiation budget requires information about the angular characteristics of radiation that is reflected (shortwave)[1] and emitted (longwave)[1] from the Earth-atmosphere system (Smith et al. 1986). The angular characteristics can be defined by models which express, for an imaginary surface element at the top of the atmosphere, the exiting radiance for each direction out to space as a function of the total hemispheric flux leaving the element. In principle, a radiance measurement at a single angle can then be converted into an inferred hemispheric flux. For successful application of the angular models, it is necessary to classify the Earth observations into a set of scenes (e.g., ocean, land, snow, and clouds) and to have a complete set of angular models for each scene class.

Past investigations of Earth radiation budget from satellite measurements have varied considerably in the approach to angular models for reflected radiation. To analyze the Nimbus 3 measurements, Raschke et al. (1973) used three scenes (ocean, snow, and a cloud-land combination) and "gross-empirical" models derived from a variety of sources including aircraft, balloons, and early satellite data. The scene identification was a static process, since the scene type for a given measurement location was determined a priori. Because of the lack of well-defined angular models, Gruber (1977) assumed isotropy for all shortwave observations while analyzing the National Oceanic and Atmospheric Adminstration (NOAA) Scanning Radiometer (SR) data. The isotropy assumption obviated the need for scene identification and detailed models; however, accuracy of the results was reduced considerably. For the Nimbus 7 Earth Radiation Budget (ERB) measurements, Jacobowitz et al. (1984) used four scenes (ocean, land, snow-ice combination, and cloud); a threshold method based on climatological values of reflected and emitted fluxes for cloud identification; and detailed angular models for each scene. The angular models for this analysis were derived by Taylor and Stowe (1984) from the ERB scanner observations. The ERB data processing was the first attempt to use a dynamic cloud-identification procedure for radiation budget analysis.

The recent Earth Radiation Budget Experiment (ERBE) described by Barkstrom and Smith (1986) has a complex system of inversion algorithms which include angular radiation models. The ERBE inversion algorithms (Smith et al. 1986) use a set of 12 scenes, a Maximum Likelihood Estimation (MLE) scene identification method, and a comprehensive set of angular models. Because of the special requirements of the MLE method, statistical parameters are required as part of the angular model data set (Smith et al. 1986).

The purpose of this report is to describe and present the shortwave angular models and associated statistical quantities that have been developed for the ERBE inversion algorithms. This report is Volume I of a set of two documents; Volume II describes the longwave models developed for the ERBE analysis. The shortwave models include bidirectional and directional parameters and were derived from existing Nimbus 7 ERB and Geostationary Operational Environmental Satellite (GOES) measurements and from theoretical relations. Bidirectional parameters are: anisotropic function, standard deviation of mean radiance, and shortwave-longwave correlation coefficient. Directional parameters are: mean albedo as a function of Sun zenith angle and mean albedo normalized to the overhead Sun value. A brief description of the model characteristics and derivation is presented. Tabulated values and computer-generated plots of the models are also included.

Symbols

A	albedo
A_i	average albedo for ith solar-zenith-angle bin
a, b	known values used in interpolation

[1] Reflected radiation occurs primarily in the shortwave spectral region (0–5 μm), and emitted radiation occurs primarily in the longwave region (> 5 μm).

C_{jk}	coefficient in normalization equation for anisotropic factors for angle bin with jth viewing-zenith-angle and kth relative-azimuth-angle ranges
COVAR(sw, lw)	covariance between shortwave and longwave radiance
E_0	solar constant, 1376 W/m^2 (value for mean Earth-Sun distance)
ERB	Earth Radiation Budget
GOES	Geostationary Operational Environmental Satellite
L	radiance, W/(m^2-sr)
L'	normalized radiance (see eq. (13))
L_{ijk}	average radiance for angle bin having ith solar-zenith-angle, jth viewing-zenith-angle, and kth relative-azimuth-angle ranges, W/(m^2-sr)
M	radiation flux, W/m^2
M_i	average radiation flux for ith solar-zenith-angle bin, W/m^2
N	number of observations
N_{ijk}	number of observations for angle bin having ith solar-zenith-angle, jth viewing-zenith-angle, and kth relative-azimuth-angle ranges
R	shortwave anisotropic function (defined by eq. (2))
R_{ijk}	average shortwave anisotropic factor for angle bin having ith solar-zenith-angle, jth viewing-zenith-angle, and kth relative-azimuth-angle ranges
r	Earth-Sun distance, km
r_0	mean Earth-Sun distance, km
x, o	unknown values in interpolation equation
δ_i	normalized albedo function for ith solar-zenith-angle bin
θ	viewing zenith angle, deg (see fig. 1)
θ_0	solar zenith angle, deg (see fig. 1)
μ	cosine of viewing (e.g., satellite) zenith angle
μ_0	cosine of solar zenith angle
ρ	correlation coefficient between shortwave and longwave radiance
σ	standard deviation of radiance, W/(m^2-sr)
ϕ	azimuth angle, deg
ϕ_R	relative azimuth angle, deg (see fig. 1)

Subscripts and superscripts:

i	index for solar-zenith-angle bin
j	index for viewing-zenith-angle bin
k	index for relative-azimuth-angle bin
L	land scene type
lw	longwave
m	index for a given observation in an angle bin
mix	value for mix of 50-percent ocean and 50-percent land
n	index for colatitude angle bin
O	ocean scene type
q	index for seasons
r	reflected
sw	shortwave

A bar over a symbol denotes average value.

Scene Types and Angular Grid

The scene types selected for the ERBE data analysis (Smith et al. 1986) are used in this work. These scene types were defined on the basis of broad categories of climatologically important surface and cloud features and are given in table 1. The desert scene includes vegetated and nonvegetated types, and the snow scene includes snow and ice. There are twelve scene types: nine basic types and three mixed types. Data for the land-ocean mixed scenes are derived from values for the basic types as described in the section entitled "Mixed-Scene Models." Four levels of cloud coverage are included: clear sky (0 to 5 percent), partly cloudy (5 to 50 percent), mostly cloudy (50 to 95 percent), and overcast (95 to 100 percent).

The surface type at a given location on the Earth can be determined a priori by reference to a geographic map or atlas. The presence of a cloudy scene must be determined as part of the data processing using a scene identification technique. Note that a scene identification procedure must be applied during both the development and application stages for the angular models. Because of differences in measurements available in the two stages, the scene identification methods for development and application, in general, are not the same.

The shortwave models in this report are defined according to the angular coordinate system shown in figure 1. The principal plane is the plane containing the ray from the Sun to the target area and the zenith ray that is normal to the target area. For an exiting ray (e.g., to a satellite), the relative azimuth angle ϕ_R is measured from the principal plane on the side away from the Sun. Thus, forward reflecting corresponds to $\phi_R = 0°$, and backward reflecting corresponds to $\phi_R = 180°$.

To describe the angular variation of radiance, the angular coordinates are divided into ranges called "bins," and the model is represented by mean values for each bin. Table 2 gives the angular bin definitions for the solar zenith angle, viewing zenith angle, and relative azimuth angle. Symmetry about the principal plane is assumed for the azimuth angle. The illustration accompanying table 2 shows no bins for the first viewing-zenith-angle bin because, in fact, little variation exists. To derive a value for this so-called "cap bin," data for all azimuths are included in determining the average. However, as a practical matter for computer application, azimuthal bins are also provided for the first zenith bin to avoid indexing problems. This is accomplished by replicating the cap-bin value for all azimuths. The data presented in this report include this replication.

Shortwave Model Parameters

Models required for scene identification and conversion of satellite-measured shortwave radiance to flux include both bidirectional and directional parameters. These parameters are discussed in the sections which follow.

Bidirectional Parameters

The bidirectional model parameters are based on the following relation between radiance L and flux M:

$$M(\theta_0) = \int_{\phi=0}^{2\pi} d\phi \int_{\theta=0}^{\pi/2} d\theta L(\theta_0, \theta, \phi) \cos\theta \sin\theta \quad (1)$$

An anisotropic function R where

$$R(\theta_o, \theta, \phi) = \frac{\pi L(\theta_0, \theta, \phi)}{M(\theta_0)} \quad (2)$$

is defined as the ratio of the equivalent Lambertian flux to the actual flux. Thus, if the radiance is Lambertian, that is, independent of viewing zenith angles and azimuth angles, then $R = 1$. By substituting equation (2) into equation (1), a normalization condition for R can be written as

$$\pi^{-1} \int_0^{2\pi} d\phi \int_0^{\pi/2} d\theta R(\theta_0, \theta, \phi) \cos\theta \sin\theta = 1 \quad (3)$$

Using the finite angular bins previously described and assuming the variation over each bin to be constant at the corresponding bin-mean value, the integrals in equations (1) and (3) can be written as the following summations:

$$M_i = \sum_{k=1}^{8} (\phi_{k+1} - \phi_k) \sum_{j=1}^{7} \bar{L}_{ijk} \left(\sin^2 \phi_{j+1} - \sin^2 \phi_j\right) \quad (4)$$

and

$$\pi^{-1} \sum_{k=1}^{8} (\phi_{k+1} - \phi_k) \sum_{j=1}^{7} \bar{R}_{ijk} \left(\sin^2 \theta_{j+1} - \sin^2 \theta_j\right) = 1 \quad (5)$$

Equation (5) can be further simplified to

$$\sum_{k=1}^{8} \sum_{j=1}^{7} C_{jk} \bar{R}_{ijk} = 1 \quad (6)$$

where

$$C_{jk} = \pi^{-1} (\phi_{k+1} - \phi_k) \left(\sin^2 \theta_{j+1} - \sin^2 \theta_j\right) \quad (7)$$

and values for C_{jk} are given in table 3.

In equations (4) to (6) the barred quantities are values that have been averaged over the observations for the angular bin defined by the indices i, j, and k. Index i refers to solar zenith angle, index j refers to viewing zenith angle, and index k refers to relative azimuth angle. Also, note the change in terminology between the continuous, anisotropic function R and its discrete approximation R_{ijk}, which is called the anisotropic factor.

To use the angular models with the MLE scene identification method, other statistical parameters are needed. These parameters are the standard

deviation of the mean radiance for each angle bin,

$$\sigma_{ijk} = \left[\frac{1}{N_{ijk}} \sum_{m=1}^{N_{ijk}} (L_{ijkm} - \bar{L}_{ijk})^2 \right]^{1/2} \quad (8)$$

and the shortwave-longwave (sw-lw) radiance correlation coefficient,

$$\rho_{ijk} = \frac{\frac{1}{N_{ijk}} \sum_{m=1}^{N_{ijk}} \left(L^{sw}_{ijkm} - \bar{L}^{sw}_{ijk} \right) \left(L^{lw}_{ijkm} - \bar{L}^{lw}_{ijk} \right)}{\sigma^{sw}_{ijk} \sigma^{lw}_{ijk}} \quad (9)$$

In these equations, N_{ijk} represents the number of observations for the ijkth bin, and m is the index for the observations. Equations (1) to (8) apply to both shortwave (sw) and longwave (lw) radiation; thus, no superscript was used. However, in equation (9), it is necessary to distinguish between the sw and lw radiation by using superscripts.

To simplify the notation in subsequent equations, the bar denoting bin averages is omitted and all quantities with subscripts ijk are understood to be bin-averaged values.

In summary, the principal shortwave bidirectional parameters for the bin-averaged angular models are as follows: the anisotropic factor R_{ijk}, the standard deviation of the mean radiance σ_{ijk}, and the sw-lw correlation coefficient ρ_{ijk}. The normalization condition for R_{ijk}, which is given by equation (6), is also an important constraint to ensure radiation energy conservation.

Directional Parameters

For the present angular model data set, the directional parameters are the albedo as a function of solar zenith angle and a normalized albedo function obtained by dividing each albedo value by the corresponding overhead Sun value. Albedo is defined as

$$A(\theta_0) = \frac{M_r(\theta_0)}{(\cos\ \theta_0) E_0} \quad (10)$$

or, in terms of the solar-zenith-angle bins, it is defined as

$$A_i = \frac{M_{r,i}}{(\cos\ \theta_0, i) E_0} \qquad (i = 1, 2, \ldots, 10) \quad (11)$$

where M_r is the reflected (i.e., shortwave) flux and E_0 is the solar constant corrected for Earth-Sun distance. Therefore, the normalized albedo function is

$$\delta_i = \frac{A_i}{A_{i=1}} \qquad (i = 1, 2, \ldots, 10) \quad (12)$$

Satellite Data Sets

Ideally, angular models would be based on broadband satellite measurements with unbiased sampling over all viewing conditions and solar zenith angles and over the entire globe. It is also desirable to use high-resolution measurements for cloud detection to ensure accurate sorting by scene type. Unfortunately, no single satellite can satisfy all these requirements, primarily because of the orbit-dependent sampling biases inherent in satellite measurements. Currently, the Nimbus 7 ERB scanner provides the most extensive data available for constructing the required bidirectional models. Data from the Geostationary Operational Environmental Satellite (GOES) are very useful for establishing directional models because of its diurnal sampling capability.

The Nimbus 7 ERB derives its samples from a noon Sun-synchronous orbit. Therefore, ERB data provide global coverage, but they contain a high correlation between latitude and solar zenith angle and do not sample all Sun angles at a given latitude. With its multiaxis scanning capability, the ERB scanner does sample all viewing angles. For cloud detection, the relatively coarse resolution of the ERB scanner (90 km or larger) requires that information from higher resolution sensors be used. As a result of its sampling biases, ERB scanner data are more useful for deriving bidirectional parameters than directional parameters.

On the other hand, GOES data are obtained from a geostationary satellite orbit. The GOES instrument allows complete diurnal sampling of evey point within its field of view, has relatively high resolution, and has both visible and infrared channels. Therefore, GOES provides complete solar-zenith-angle coverage and good cloud-detection capability. However, GOES data contain a one-to-one correspondence between geographic position and viewing zenith angle and provide coverage of only about 20 percent of the Earth's surface. Also, GOES instruments have narrow spectral-band channels and are not calibrated. Thus, to obtain calibrated broadband radiation results from GOES, it is necessary to use other measurements, such as Nimbus 7 ERB, to provide a narrowband-to-broadband conversion and calibration. Because of its orbital sampling characteristics, GOES is more useful for deriving directional parameters than bidirectional parameters.

As a consequence of their sampling limitations, neither Nimbus 7 nor GOES data are complete by themselves, so construction of hybrid angular models appears to be the best approach. Even the combination of Nimbus 7 ERB scanner and GOES data does not fulfill all data requirements and theoretical

relations such as the Helmholtz Reciprocity Principle must be used. The use of this principle is discussed in a subsequent section.

Nimbus 7 ERB Data Processing

Measurements from the Nimbus 7 ERB scanner provided the primary source of information for the bidirectional parameters presented in this report. The ERB instrument is described in detail by Jacobowitz et al. (1984), so only a general description is necessary here. The ERB scanner consists of four optical telescopes, each of which has a broadband shortwave (0.2 to 4 μm) and longwave (5 to 50 μm) channel. This instrument has a multiaxis scanning capability. It can scan from horizon to horizon along the orbital track and scan to a viewing zenith angle of 72° in the cross-track direction. At the nadir, spatial resolution is about 90 km × 90 km, and it increases to as much as 250 km × 250 km at the maximum scan angle.

The ERB measurements were processed at the NOAA National Environmental Satellite, Data, and Information Service using methods described by Taylor and Stowe (1984, 1986). The data were sorted into the angular bins and scene types described previously. Scene identification was performed with an improved Nimbus 7 cloud-detection algorithm described by Stowe et al. (1988). Previous results were obtained using the cloud-ERB (CLE) algorithm. The improved cloud-detection scheme, called the new CLE (NCLE) algorithm, uses measurements from the Temperature and Humidity Infrared Radiometer (THIR) and the Total Ozone Mapping Spectrometer (TOMS), both of which are on the Nimbus 7 spacecraft with the ERB instrument. The NCLE is based on a surface temperature analysis from 3-hourly, Air Force 3-D nephanalysis data (Fye 1978); on reflectance data from the ultraviolet channel of the TOMS; and on infrared window channel emission from the THIR. To derive angular models, simultaneous data from the ERB scanner, TOMS, THIR, and the surface temperature analysis were available for 205 days of the period from April 1, 1979, to June 22, 1980.

For each angular bin where sufficient data were available, results were determined for the following: mean shortwave (sw) and longwave (lw) radiances, standard deviation of sw and lw radiances, sw-lw radiance correlation coefficients, and sw and lw anisotropic functions. To remove variations caused by Earth-Sun distance and solar zenith angle, which would tend to bias the bin-averaged radiance, each radiance measurement is normalized to 1 astronomical unit (AU) and overhead Sun (i.e., $\mu_0 = \cos\theta_0 = 1$) before averaging. The radiance normalization is given by

$$L' = \frac{L}{\mu_0}\left(\frac{r}{r_0}\right)^2 \tag{13}$$

where L' is the normalized radiance, μ_0 is the cosine of the solar zenith angle for the measurement, r is the Earth-Sun distance at the time of the measurement, and r_0 is the mean Earth-Sun distance (i.e., value for 1 AU). For subsequent calculations requiring radiance values, a correction is made for the solar zenith angle of the bin by multiplying the bin-mean normalized radiance by the cosine of the solar zenith angle at the midpoint for the bin. However, the reference of 1 AU is retained for mean radiances, and albedos are calculated using the solar constant for the mean Earth-Sun distance.

The anisotropic factor R_{ijk} was determined by first using equation (4) to integrate the bin-mean normalized radiance over all viewing bins; this integration resulted in a normalized flux. The anisotropic factor then followed from application of the discrete form of equation (2) with use of the normalized radiance and flux. The effect of solar-zenith-angle normalization cancels in this case. The albedo A_i, as defined by equation (11) with a 1-AU reference, was determined by dividing the normalized flux by the solar constant for mean Earth-Sun distance. That is, the solar-zenith-angle normalization includes the cosine of the solar-zenith-angle factor in equation (11). Finally, the normalized albedo function is determined by using equation (12).

GOES Data Processing

The GOES and ERB scanner results were used to determine the mean albedo for each solar-zenith-angle bin and scene type. For GOES results, the analysis of November 1978 GOES-East data by Minnis and Harrison (1984b, 1984c) was used. Narrowband GOES data were converted to broadband radiances using spectral calibration functions determined empirically from collocated Nimbus 7 ERB and GOES-East measurements over ocean, land, and cloud surfaces. With bidirectional reflectance models derived from GOES and aircraft data for ocean, land, and clouds, the GOES estimated broadband radiances were then used to determine radiation fluxes and albedos. The albedo results were sorted by the angular bins and scene types previously described. The scene identification was based on an analysis of GOES data using the method of Minnis and Harrison (1984a), which uses 8-km infrared data and 1-km visible data sampled every 8 km.

Spectral calibration functions derived from collocated GOES data and preliminary ERBE data revealed a solar-zenith-angle dependence in the calibration function that could not have been determined with the original Nimbus 7 ERB and GOES-East data sets. This solar-zenith-angle relationship was used to correct the original albedos reported by Minnis and Harrison (1984c). The resulting changes in the albedos were minor except for the clear-land model, where the corrected results show less variation with Sun angle.

Model Development

Bidirectional Models

Measurements from the Nimbus 7 ERB scanner provided the primary data source for deriving the bidirectional parameters of the nine basic scene types. Unfortunately, values for certain combinations of angle bin and scene type were not available from the ERB measurements. Some of the bin values were either missing or of questionable value because of small sample populations. Values derived with less than 8 samples for the bin were considered to be nonrepresentative and were treated as missing. Two distinctly different problems occurred. One problem involved values missing for an entire solar-zenith-angle bin, and the other involved values missing for a few scattered viewing-zenith-angle bins. The treatment of these problems is discussed in this section.

The first, and most serious, type of problem involved values missing for an entire solar-zenith-angle bin. Table 4 shows the scene types and solar bins where this problem occurred and methods used to establish values for the anisotropic functions. Since GOES data are not appropriate for providing the missing values, the Helmholtz Principle of Reciprocity (see appendix A) and empirical relations for the desert scene (Staylor and Suttles 1986) were used. The use of the empirical relations for deserts was limited to intermediate solar angles, since this was the limit of data available in deriving the relations. Missing data for other bidirectional model parameters (standard deviations and correlation coefficients) were estimated, because no reciprocity or empirical relations were available for them. Standard deviation of mean radiance was estimated using the corresponding viewing-zenith-bin dispersion values (ratio of standard deviation to mean radiance) from the nearest solar-zenith-angle bin where data were available. The *sw-lw* correlation coefficients were assumed to be zero, since a recent study (Smith et al. 1986) has shown the MLE scene identification to be insensitive to this parameter.

The second type of problem involved values missing for occasional, isolated viewing-angle bins which generally occurred at the largest viewing-angle bins. In general, the reciprocity principle was not effective for these cases, because values from the highest solar bin would be required and these were either missing or were somewhat questionable. In most of these cases, values were determined by interpolation. However, for some situations, the interpolated values produced unusual variations or unreasonable reciprocity results. In these cases, more reasonable values were estimated to correct the difficulties. The interpolations were performed using a bilinear approach. The linear interpolation was first done along the azimuthal direction and then along the viewing zenith direction. The results from both interpolations are then averaged to get the estimated value. This operation was performed for the missing anisotropic functions, standard deviations, and correlation coefficients. The interpolation schemes used are as follows:

Case	Bin configuration	Interpolated value of x
1	$a\ x$	a
2	$a\ o\ x$	a
3	$a\ o\ o\ x$	Unknown
4	$a\ x\ o\ o$	a
5	$a\ o\ x\ o$	a
6	$a\ x\ b$	$a/2 + b/2$
7	$a\ x\ o\ b$	$2a/3 + b/3$
8	$a\ x\ o\ o\ b$	a
9	$a\ o\ x\ o\ b$	Unknown[1]

[1]Use x-value in other direction if available; if not available, use $x = (a/2) + (b/2)$.

In the preceding table, "a" and "b" are known values, "o" is an unknown value, and "x" is the value to be determined. After an interpolated value is found, it is never used as a known value to interpolate for missing data. The possibility exists that a value would be undeterminable. For example, case 3 demonstrates an instance in which a value for "x" cannot be determined. Fortunately, such cases are few, but when they occur, values are estimated using linear extrapolation or scaling from data in neighboring solar-zenith-angle bins.

After obtaining values for all angle bins, the models were checked using the normalization criterion (i.e., eq. (6)), and, if necessary, the anisotropic factors were adjusted and recomputed. Final model values satisfy the normalization criterion to within ± 0.0001.

Directional Models

Because of sampling biases in the satellite data, the directional models presented here are based on a hybrid of Nimbus 7 ERB and GOES Measurements. Briegleb et al. (1986) showed that, for the range of commonly available solar zenith angles, albedos derived from nearly simultaneous GOES and Nimbus 7 data are within ±0.01 of each other. Thus, the two data sets yield nearly the same albedo variation with Sun angle for scenes that both satellites view. Therefore, it is assumed that the albedos derived from GOES data over other scenes at other Sun zenith angles would be very close to those which would have been measured by Nimbus 7 if such measurements were possible. In effect, the GOES data extend the sampling capabilities of Nimbus 7.

For convenience, the directional models are normalized by dividing each bin value of albedo by the value for the first solar-zenith-angle bin. Thus, the model can be defined in terms of the normalized function (a shape function) and the albedo for the first solar bin (a reference value). Because of the sampling characteristics previously mentioned, it was assumed that the GOES data yield the best estimate of the shape function for tropical and subtropical latitudes (i.e., about one-half of the globe) and that, aside from the lowest solar zenith angles, the Nimbus 7 ERB data best describe the shape function for middle and high latitudes. Differences in the mixes of cloud types and land surface types are expected to give rise to differences in the solar-zenith-angle dependence of albedo. Since a set of models that represent the global mean for each scene type is required, a simple average of the GOES and Nimbus 7 ERB models was used to construct the hybrid directional models. Several exceptions to this averaging process are noted in this section.

For the Nimbus 7 ERB data, a geographically dependent sampling caused unreasonable changes in the variation of albedo with Sun angle for several scene types. For example, there was a significant decrease in albedo for overcast and mostly cloudy scenes over ocean at low solar zenith angles and for mostly cloudy scenes over land at high solar zenith angles. In those cases, the Nimbus 7 ERB data were subjectively smoothed before being averaged with the GOES data.

The Nimbus 7 and GOES models used in the averaging process are shown in figures 2 and 3 for ocean and land, respectively. For the most part, the models show good agreement over clear and partly cloudy ocean and clear and overcast land. The differences between the GOES and Nimbus 7 models for the other categories may be a reflection of differences in cloud types over the respective areas sampled by the two satellites. It was determined from the Nimbus 7 cloud data that the percentages of cirrus clouds in the total cloud cover for the mostly cloudy and overcast ocean categories are twice as high in the first two solar bins as they are in all other solar bins. This implies that cirrus clouds, which have a relatively low albedo, are more frequently observed over the tropical ocean than over other marine areas. The GOES data, which are more representative of tropical areas, yield lower albedos than the Nimbus 7 data at most solar zenith angles. Over land areas, cirrus clouds are observed almost as frequently poleward of 30° latitude as they are between 30°S and 30°N (Warren et al. 1986), which may be one reason that the albedos from the two satellites for the overcast and mostly cloudy categories over land are closer than those over ocean. In almost all cases, the albedos in the two figures increase with increasing solar zenith angle.

Two other exceptions to the simple averaging rule for constructing the models occurred for the clear-over-snow and clear-over-desert scenes, because GOES results were unavailable for those scene categories. Also, the ERB results for albedo variations with Sun angle for those scenes appeared to be erratic for reasons explained subsequently. Theoretical results were therefore used to establish the shape function, and the ERB albedos were fit to this function using a least-squares approach. The radiative transfer code for the theoretical calculations is described by Wiscombe, Welch, and Hall (1984). For the snow theoretical model, Lambertian surface reflectance data for new winter snow were used with atmospheric data for a cloud-free midlatitude region. When fitting the Nimbus 7 ERB data to the model results, the ERB albedo values at solar bin 3 (Mean cos $\theta_0 = 0.75$) and solar bin 4 (Mean cos $\theta_0 = 0.65$) were not used because of their marked deviation from the rest of the data. Those values were derived from midlatitude regions where the snow would come from forested areas or would be patchy and hence produce anomalously lower albedos. Results of the fit are shown in figure 4. For the desert, Wiscombe's calculations for a clear Arabian Desert and a Lambertian surface reflectance were fit to the Nimbus 7 ERB data. The ERB desert data contain samples from both vegetated and nonvegetated desert regions over the entire Earth; nevertheless, samples were only available for the first six solar-zenith-angle bins. Results for the desert albedo variation are given in figure 5.

Mixed-Scene Models

Since the Nimbus 7 ERB data were not sorted for the mixed-scene types (i.e., clear over land-ocean mix, partly cloudy over land-ocean mix, and mostly cloudy over land-ocean mix), models for these scenes were determined by computations. It is assumed in these computations that observations of a mixed scene are either ocean or land with an equal (i.e., 50-percent) probability of being one or the other.

Equations for computation of the mixed-scene parameters are developed in detail in appendix B and are summarized below:

Mean albedo:

$$A_i^{\text{mix}} = \frac{1}{2}\left(A_i^O + A_i^L\right) \tag{14}$$

Anisotropic factor:

$$R_{ijk}^{\text{mix}} = \frac{1}{2A_i^{\text{mix}}}\left(A_i^L R_{ijk}^L + A_i^O R_{ijk}^O\right) \tag{15}$$

Standard deviation:

$$\sigma_{ijk}^{\text{mix}} = \left[\frac{1}{2}\left(\sigma_{ijk}^L\right)^2 + \frac{1}{2}\left(\sigma_{ijk}^O\right)^2 + \frac{1}{4}\left(\frac{\mu_0 E_0}{\pi}\right)^2\left(A_i^L R_{ijk}^L - A_i^O R_{ijk}^O\right)^2\right]^{\frac{1}{2}} \tag{16}$$

where $\mu_0 = \cos\theta_{0,i}$.

The *sw-lw* correlation coefficient computations were more complicated. The complications arose mainly from the fact that both shortwave and longwave data are involved and that these two data sets were sorted according to two different binning schemes. The shortwave data were binned according to scene type, Sun angle, viewing zenith angle, and relative azimuth angle. The longwave data were binned according to scene type, viewing zenith angle, colatitude, and season. Colatitude sorting was done for 18, 10° zones, and seasonal sorting was done for winter (December, January, and February), spring (March, April, and May), summer (June, July, and August), and fall (September, October, and November).

Yearly averaged longwave data were computed as follows:

$$\left(\sigma_{jn}\right)_{lw} = \left\{\frac{1}{4}\sum_{q=1}^{4}\left[\left(\sigma_{jnq}\right)_{lw}\right]^2\right\}^{\frac{1}{2}} \tag{17}$$

where $(\sigma_{jnq})_{lw}$ represents the longwave standard deviation for the jth viewing zenith bin, nth colatitude bin, and qth season. Global average longwave results were determined by

$$\left(\sigma_j\right)_{lw} = \left\{\frac{1}{18}\sum_{n=1}^{18}\left[\left(\sigma_{jn}\right)_{lw}\right]^2\right\}^{\frac{1}{2}} \tag{18}$$

Other longwave parameters were calculated in a similar manner.

The correlation coefficient for mixed scenes is defined by

$$\rho_{ijk}^{\text{mix}} = \frac{\frac{1}{N}\sum_{n=1}^{N}\left[\text{COVAR}(sw,lw)\right]_{ijkn}}{\left(\sigma_{ijk}^{\text{mix}}\right)_{sw}\left(\sigma_j^{\text{mix}}\right)_{lw}} \tag{19}$$

where n is the colatitude index and $N = 10$.

The covariance between the shortwave and longwave radiance is computed as follows:

$$\begin{aligned}\left[\text{COVAR}(sw,lw)\right]_{ijkn} = {} & \frac{1}{2}\left[\rho_{ijk}^L\left(\sigma_{ijk}^L\right)_{sw}\left(\sigma_{jn}^L\right)_{lw}\right] \\ & + \frac{1}{2}\left[\rho_{ijk}^O\left(\sigma_{ijk}^O\right)_{sw}\left(\sigma_{jn}^O\right)_{lw}\right] \\ & + \frac{E_0\mu_0}{4\pi^2}\left[A_i^L\left(R_{ijk}^L\right)_{sw}\right. \\ & \left. - A_i^O\left(R_{ijk}^O\right)_{sw}\right]\left[M_n^L\left(R_{jn}^L\right)_{lw}\right. \\ & \left. - M_n^O\left(R_{jn}^O\right)_{lw}\right]\end{aligned} \tag{20}$$

Overcast Cloud Models

The Nimbus 7 ERB and GOES data were sorted into models for overcast clouds separately over ocean and land, but the ERBE scene classifications include only a general overcast type. Therefore, all parameters for the overcast model were computed using a population and energy (albedo) weighted average of the overcast-over-ocean and overcast-over-land values, which are plotted in figure 6.

Results

Results for the angular radiation models are given in the form of tables of the bin-averaged values and computer-generated plots of these values.

Bidirectional Models

Figures 7 to 18 contain the bidirectional models for the 12 ERBE scene types. For each of the angle bins, bin-mean values are given for the anisotropic

reflectance factor, the standard deviation of the radiances in $W/(m^2\text{-sr})$, and the *sw-lw* correlation coefficient. To identify the data source, a number is given in parentheses by each value. These numbers are defined in table 5.

Plots of the anisotropic factors for each scene type are also given in figures 7 to 18. Since anisotropic factors greater than 2 are usually associated with regions of high rate of change and relatively large uncertainty, the models are questionable in these regions; hence, plots were restricted to values ≤ 2.0. No attempt was made to smooth the models; the values were simply connected by straight lines to form the plots. In general, the anisotropic factors have small variations in the first 3 solar angle bins, but then have significant increases with increasing viewing zenith angle (i.e., a limb-brightening effect) at higher solar angles. There are two notable exceptions to this characteristic behavior. In the first 3 or 4 solar bins, the ocean scene shows significant effects of specular reflection at the surface near the zenith angle of the Sun in the forward scatter direction. The effect of specular reflection can be seen in the anisotropic factors of the clear-over-ocean scene (fig. 7), the clear over land-ocean mix (fig. 11), the partly cloudy-over-ocean scene (fig. 12), and the partly cloudy over land-ocean mix (fig. 14) and to a slight degree in the mostly cloudy-over-ocean (fig. 15) values. The other exception is for the clear-over-snow (fig. 9) scene, where the anisotropic factors decrease with increasing viewing zenith angle (limb darkening) in the first 3 solar-zenith-angle bins. In this case, the upward radiation is dominated by the very high surface albedo of snow, except at the large viewing angles, where the atmospheric absorption reduces the radiation leaving the top of the atmosphere.

The models also become more anisotropic with increasing solar zenith angle. For example, the anisotropic factor decreases at small viewing zenith angles (i.e., near nadir) and increases at large viewing zenith angles with increasing solar zenith angle.

The standard deviations exhibit no definite pattern of variation except that as the radiance and anisotropic factors become large, the standard deviation also becomes large. To examine the variation of standard deviation with scene type and solar angle, the mean dispersion (i.e., standard deviation divided by mean radiance) over viewing angles was computed and averaged over the viewing-angle bins for each solar-zenith-angle bin. Results are given in figure 19 for the ocean and land scene types with various cloud covers. It is shown that the partly and mostly cloudy scenes have larger dispersions than the clear and overcast scenes; this is to be expected because of the range of cloud fractions involved. Also, the dispersion of the cloudy scenes generally decreases with increasing solar zenith angle, behavior that is not expected. This characteristic may be a result of the high correlation between latitude and Sun angle for the Nimbus 7 ERB data. Thus, the larger dispersions in the first few solar-zenith-angle bins would be caused by the large height variations of convective cloud fields in the tropics, and the lower dispersions in the last few solar-zenith-angle bins would result from stratiform cloud fields in the polar regions. Dispersions for intermediate solar bins are produced by the midlatitude cloud fields which, on average, would include significant contributions from both convective and stratiform types.

Directional Models

Results for the directional models are presented in tables 6 and 7 and in figures 20 to 22. Table 6 contains the albedos as a function of solar-zenith-angle bin number for all 12 categories. The corresponding directional models (albedos normalized to the bin-1 value) are given in table 7. Albedo increases with increasing solar zenith angle for all categories except snow.

The overcast model is very similar to the ocean overcast model, because the population statistics heavily favor ocean data by factors ranging from 3 to 16. Thus, the overcast model is actually more representative of marine overcast conditions. The maximum values of the normalized models are 1.54 and 1.46 over ocean and land, respectively; therefore, it does not appear that using the normalized overcast model over land areas will introduce any significant errors. In the determination of the scene identification, however, the value of albedo is important. The albedos for overcast and mostly cloudy-over-ocean scenes in figure 20 are separated by about 0.18 at low solar zenith angles, and they gradually converge to a separation of about 0.10 in the last angle bin. This separation properly represents the mean-albedo statistics for these conditions over ocean. In figure 21, however, the two curves for these categories have a maximum separation of only 0.12 in the first bin and rapidly converge at higher solar zenith angles. Thus, the distribution between mostly cloudy and overcast conditions is muddled over land areas. This distribution may cause some significant scene selection errors over land areas.

Preliminary albedos from the first ERBE validation studies (Smith, Barkstrom, and Harrison 1987) are consistent with the albedo models shown in figures 20 to 22 except for two cases, mostly cloudy over land and overcast over land. For scenes identified as overcast over land, these initial ERBE-derived albedos are similar to the land albedo model in figure 6

for the first few solar bins and gradually approach the overcast albedo model (fig. 21) in the last bin. The mostly cloudy ERBE-derived albedos agree with the corresponding albedo model in the first bin and then diverge to values lower than those for the model in the remaining bins. Most of these discrepancies between the model and the preliminary results are probably due to the statistical mismatch between the mostly cloudy-over-land models and overcast model.

Concluding Remarks

A set of shortwave bidirectional and directional reflectance models has been developed for Earth radiation budget (ERB) measurement and simulation applications. These models describe the mean variation of top-of-the-atmosphere reflectance with solar zenith angle, viewing zenith angle, and relative azimuth angle for 12 scene categories. They have been derived primarily from radiances measured by the Nimbus 7 ERB scanner and Geostationary Operational Environmental Satellite (GOES) instruments, which operated between late 1978 and 1980. Missing and sparsely sampled observed quantities have been estimated by a variety of techniques, including simple linear and bilinear interpolation, linear extrapolation, the reciprocity principle, and radiative transfer model results. The primary purposes of this report are to present the shortwave angular radiation models and describe the data and methods used in deriving the models. The models presented herein have been archived and are available from the National Space Sciences Data Center, Goddard Space Flight Center, Greenbelt, Maryland 20771.

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Appendix A

Application of Helmholtz Reciprocity Principle to Bidirectional Models

A derivation of the Helmholtz Reciprocity Principle for a plane-parallel atmosphere has been given by Chandrasekhar (1960). Mathematically, the principle is expressed as follows:

$$\mu_1 L(\mu_1, \phi_R; \mu_2) = \mu_2 L(\mu_2, \phi_R; \mu_1) \qquad (A1)$$

where L is the reflected radiance, μ is the cosine of the zenith angle, and ϕ_R is the relative azimuth angle between the incident and reflected rays. The first cosine in the argument for the radiance characterizes the geometry of the reflected radiation, and the second cosine characterizes the geometry of the incident radiation. In essence, the principle states that the product of cosine reflection angle and reflected radiance is unaltered if the incidence and reflection angles are interchanged. Therefore, application of this principle is very useful in completing bidirectional models for angles where data are not directly available.

In terms of the anisotropic factor and albedo defined in this report (i.e., eqs. (2) and (10)), the reciprocity principle may be written as follows:

$$R(\mu_1, \phi_R; \mu_2) A(\mu_2) = R(\mu_2, \phi_R; \mu_1) A(\mu_1) \quad (A2)$$

This relation provides a means for establishing the anisotropic model when data for an entire solar zenith angle are missing. Using values where data are available, results from the reciprocal angle pairs provide the bulk of the missing values. The remaining values can be filled in by sequentially using linear interpolation and the reciprocity relation. This procedure results in values for the product of anisotropic factor and albedo. To determine the anisotropic factor and albedo separately, the normalization equation (eq. (6)) can be multiplied by the albedo to obtain the following:

$$\sum_j \sum_k C_{jk} R_{ijk} A_i = A_i \qquad (A3)$$

Application of this equation allows computation of the albedo, and subsequently the anisotropic factors, from the product results.

When applying the reciprocity principle, the solar and viewing zenith angles are interchanged; that is, the i and j subscripts are interchanged. However, the angular bin scheme used for the models contains 10 solar zenith bins, but only 7 viewing zenith bins. In order to use the principle, values for the product of anisotropic factor and albedo were linearly interpolated onto a grid with 10 viewing zenith bins defined, just as the solar zenith bins are defined. In most cases where the reciprocity principle is to be applied, data extend only through the first 7 solar zenith bins, so that models can be generated for the 8th, 9th, and 10th solar bins but only for the first 7 viewing zenith bins. Data for viewing zenith bin 8 were determined for solar bins 8, 9, and 10 by linear extrapolation of values for viewing bins 6 and 7. With a subsequent application of reciprocity, all values for solar bin 8 can be found. This process is repeated to fill the remaining values in solar bins 9 and 10. With the completed models, the results are linearly interpolated back onto the 7 viewing-zenith-angle bins.

Appendix B

Equations for Mixed-Scene Properties

Along the coastlines of continents, scenes occur that are a mix of two or more types. Since the majority of these scenes are a mix of a land type and an ocean type and are normally of about equal proportions, all mixed scenes have been assumed to be composed of 50-percent land and 50-percent ocean. Furthermore, it is assumed that a collection of observations for a coastal region consists of single observations that are either land or ocean scenes with half the observations looking like land and half like ocean. With these assumptions, the statistical properties of the mixed scenes can be calculated using the properties for the corresponding land and ocean scene types.

The relations for the mixed-scene properties are based on the equations that define the desired statistical properties of the radiance observations as follows:

Mean (sw or lw):

$$\bar{L} = \frac{1}{N}\sum_{1}^{N} L \tag{B1}$$

Standard deviation (sw or lw):

$$\sigma = \left[\frac{1}{N}\sum_{1}^{N}(L-\bar{L})^2\right]^{1/2} = \left[\left(\frac{1}{N}\sum_{1}^{N}L^2\right) - \bar{L}^2\right]^{1/2} \tag{B2}$$

Correlation of sw and lw:

$$\rho = \frac{1}{\sigma_{sw}\sigma_{lw}}\left[\frac{1}{N}\sum_{1}^{N}\left(L_{sw}-\bar{L}_{sw}\right)\left(L_{lw}-\bar{L}_{lw}\right)\right]$$

$$= \frac{1}{\sigma_{sw}\sigma_{lw}}\left[\frac{1}{N}\left(\sum_{1}^{N}L_{sw}L_{lw}\right) - \bar{L}_{sw}\bar{L}_{lw}\right] \tag{B3}$$

With the assumption that half of the observations are ocean O and half are land L, equations (B1) to (B3) can be written as follows:

$$\bar{L}^{\text{mix}} = \frac{1}{N}\left(\sum_{1}^{N/2}L^O + \sum_{N/2+1}^{N}L^L\right)$$

$$= \frac{1}{2}\left(\bar{L}^O + \bar{L}^L\right) \tag{B4}$$

$$\left(\sigma^{\text{mix}}\right)^2 = \frac{1}{N}\left[\sum_{1}^{N/2}\left(L^O\right)^2 + \sum_{N/2+1}^{N}\left(L^L\right)^2\right] - \left[\frac{1}{2}\left(\bar{L}^O + \bar{L}^L\right)\right]^2 \tag{B5}$$

$$\rho^{\text{mix}}\sigma^{\text{mix}}_{sw}\sigma^{\text{mix}}_{lw} = \frac{1}{N}\left(\sum_{1}^{N/2}L^O_{sw}L^O_{lw} + \sum_{N/2+1}^{N}L^L_{sw}L^L_{lw}\right) - \left[\frac{1}{2}\left(\bar{L}^O_{sw} + \bar{L}^L_{sw}\right)\right] \times \left[\frac{1}{2}\left(\bar{L}^O_{lw} + \bar{L}^L_{lw}\right)\right] \tag{B6}$$

If the statistical properties of the ocean and land radiance observations for the coastal regions are assumed to be equal to the statistical properties of the observations for the rest of the Earth, equations (B5) and (B6) can be simplified as follows:

$$\left(\sigma^{\text{mix}}\right)^2 = \frac{1}{2}\left(\sigma^O\right)^2 + \frac{1}{2}\left(\sigma^L\right)^2 + \frac{1}{4}\left(\bar{L}^O - \bar{L}^L\right)^2 \tag{B7}$$

$$\rho^{\text{mix}}\sigma^{\text{mix}}_{sw}\sigma^{\text{mix}}_{lw} = \frac{1}{2}\rho^O\sigma^O_{sw}\sigma^O_{lw} + \frac{1}{2}\rho^L\sigma^L_{sw}\sigma^L_{lw} + \frac{1}{4}\left(\bar{L}^L_{sw} - \bar{L}^O_{sw}\right)\left(\bar{L}^L_{lw} - \bar{L}^O_{lw}\right) \tag{B8}$$

Using equations (B4), (B7), and (B8) with the definitions of anisotropic factor R (eq. (2)), albedo A (eq. (10)), and flux M (eq. (1)), the mixed-scene equations have been derived as follows:

$$\bar{A}^{\text{mix}} = \frac{1}{2}\left(\bar{A}^O + \bar{A}^L\right) \tag{B9}$$

$$\bar{R}^{\text{mix}} = \frac{1}{2\bar{A}^{\text{mix}}}\left(\bar{A}^O\bar{R}^O + \bar{A}^L\bar{R}^L\right) \tag{B10}$$

$$\left(\sigma^{\text{mix}}\right)^2 = \frac{1}{2}\left(\sigma^O\right)^2 + \frac{1}{2}\left(\sigma^L\right)^2 + \frac{1}{4}\left(\frac{\mu_0 E_0}{\pi}\right)^2 \times \left(\bar{A}^L\bar{R}^L - \bar{A}^O\bar{R}^O\right)^2 \tag{B11}$$

and

$$\rho^{\text{mix}}\sigma^{\text{mix}}\sigma^{\text{mix}} = \frac{1}{2}\rho^O\sigma^O_{sw}\sigma^O_{\text{lw}} + \frac{1}{2}\rho^L\sigma^L_{sw}\sigma^L_{lw} + \frac{E_0\mu_0}{4\pi^2}\left(\bar{A}^L\bar{R}^L_{sw} - \bar{A}^O\bar{R}^O_{sw}\right) \times \left(\bar{M}^L_{lw}\bar{R}^L_{lw} - \bar{M}^O_{lw}\bar{R}^0_{lw}\right) \tag{B12}$$

where the statistical properties for land and ocean scenes are those determined from the global data set.

Table 1. Scene Types for Angular Models

Scene	Cloud coverage, percent	Figure
Clear over ocean	0 to 5	7
Clear over land		8
Clear over snow		9
Clear over desert		10
Clear over land-ocean mix		11
Partly cloudy over ocean	5 to 50	12
Partly cloudy over land or desert	5 to 50	13
Partly cloudy over land-ocean mix	5 to 50	14
Mostly cloudy over ocean	50 to 95	15
Mostly cloudy over land or desert	50 to 95	16
Mostly cloudy over land-ocean mix	50 to 95	17
Overcast	95 to 100	18

Table 2. Angular Bin Definitions

Bin	Solar zenith angle θ_0, deg	Bin	Viewing zenith angle θ, deg	Bin	Relative azimuth angle ϕ_R, deg
1	0 to 25.84	1	0 to 15	1	0 to 9
2	25.84 to 36.87	2	15 to 27	2	9 to 30
3	36.87 to 45.57	3	27 to 39	3	30 to 60
4	45.57 to 53.13	4	39 to 51	4	60 to 90
5	53.13 to 60.00	5	51 to 63	5	90 to 120
6	60.00 to 66.42	6	63 to 75	6	120 to 150
7	66.42 to 72.54	7	75 to 90	7	150 to 171
8	72.54 to 78.46			8	171 to 180
9	78.46 to 84.26				
10	84.26 to 90.00				

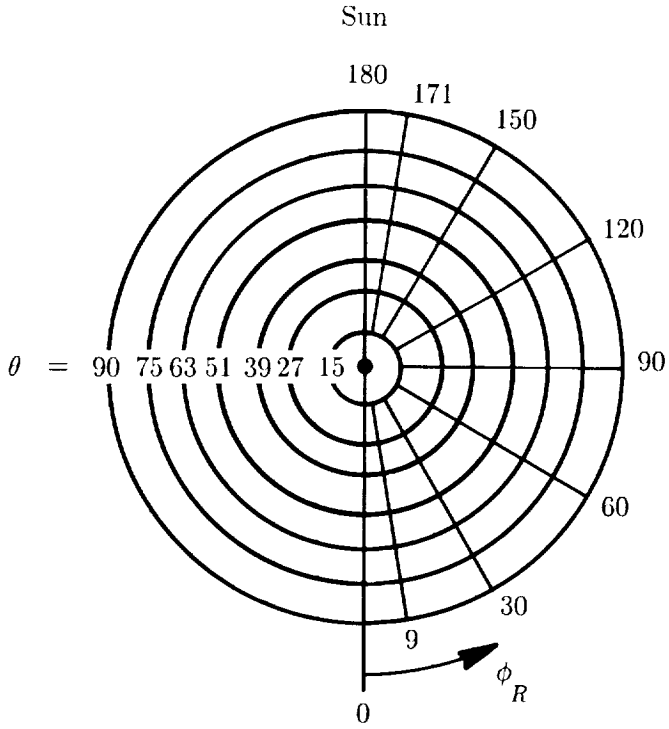


Table 3. Shortwave Integration Coefficients (C_{jk})

Viewing zenith angle θ, deg	Relative azimuth angle ϕ_R, deg							
	0 to 9	9 to 30	30 to 60	60 to 90	90 to 120	120 to 150	150 to 171	171 to 180
0 to 15	0.00335	0.00782	0.01116	0.01116	0.01116	0.01116	0.00782	0.00335
15 to 27	.00696	.01623	.02319	.02319	.02319	.02319	.01623	.00696
27 to 39	.00950	.02216	.03165	.03165	.03165	.03165	.02216	.00950
39 to 51	.01040	.02426	.03465	.03465	.03465	.03465	.02426	.01040
51 to 63	.00950	.02216	.03165	.03165	.03165	.03165	.02216	.00950
63 to 75	.00696	.01623	.02319	.02319	.02319	.02319	.01623	.00696
75 to 90	.00335	.00782	.01116	.01116	.01116	.01116	.00782	.00335

Table 4. Sources of Shortwave Bidirectional Parameters

N = Nimbus 7 ERB scanner measurements
1 = Filled using reciprocity principle
2 = Filled using empirical model (Staylor and Suttles 1986)
PC = Partly cloudy
MC = Mostly cloudy

Scene	Solar-zenith-angle bin									
	1	2	3	4	5	6	7	8	9	10
Ocean	N	N	N	N	N	N	N	1	1	1
Land	N	N	N	N	N	N	N	1	1	1
Snow	1	1	1	N	N	N	N	N	N	N
Desert	N	N	N	N	N	2	2	1	1	1
PC/ocean	N	N	N	N	N	N	N	N	N	N
PC/land	N	N	N	N	N	N	N	1	1	1
MC/ocean	N	N	N	N	N	N	N	N	N	N
MC/land	N	N	N	N	N	N	N	N	N	N
Overcast	N	N	N	N	N	N	N	N	N	N

Table 5. Identification of Sources for Tabulated Data in Figures 7 to 18

0—No data (default value).
1—Value based on NOAA analysis of 205 days of Nimbus 7 ERB data (Taylor and Stowe 1986).
2—Value is a 50-percent land and 50-percent ocean composite of data from source 1.
3—Value interpolated by NOAA because there were no data.
4—Value determined by linear interpolation and constant extrapolation. Determine a row value and a column value by the following rules and average these two values. The procedures are shown below; a and b are good values, o denotes unknown values, and x is the determined value.

Case	Bin configuration	Interpolated value of x
1	$a\ x$	a
2	$a\ o\ x$	a
3	$a\ o\ o\ x$	Unknown
4	$a\ x\ o\ o$	a
5	$a\ o\ x\ o$	a
6	$a\ x\ b$	$a/2 + b/2$
7	$a\ x\ o\ b$	$2a/3 + b/3$
8	$a\ x\ o\ o\ b$	a
9	$a\ o\ x\ o\ b$	Unknown[1]

[1]Use x-value in other direction if available; if not available, use $x = (a/2) + (b/2)$.

5—Value interpolated by 4 because there were no data.
6—Value interpolated by 4 because data were sparse and results were unlikely.
7—Source 1 with sample population between 8 and 20.
8—Source 1 with sample population between 21 and 50.
9—Source 1 with sample population between 51 and 100.
10—Source 1 with sample population between 101 and 500.
11—Source 1 with sample population greater than 501.
12—Value derived by Helmholtz Principle of Reciprocity.
13—Value scaled by neighboring Sun bin values.
14—Albedos derived by fitting theoretical shape function through Nimbus 7 data.
15—Value estimated.
16—Value taken from numerical model developed in Staylor and Suttles (1986).
17—Value computed by population and albedo weighting for overcast-over-ocean and overcast-over-land scenes.
18—Albedos determined from Nimbus 7 ERB and GOES values.
19—Value is a 50-percent land and 50-percent ocean composite of data from source 18.

Table 6. Mean-Directional Albedo for Shortwave Angular Models

[L-O = Land-ocean mix
PC = Partly cloudy
MC = Mostly cloudy]

Scene	Solar-zenith-angle bin									
	1	2	3	4	5	6	7	8	9	10
Ocean	0.0760	0.0820	0.0910	0.1010	0.1150	0.1330	0.1610	0.2030	0.2680	0.3340
Land	.1600	.1565	.1630	.1670	.1750	.1863	.2050	.2310	.2700	.3260
Snow	.6673	.6703	.6733	.6759	.6779	.6789	.6774	.6708	.6502	.6189
Desert	.2369	.2388	.2411	.2437	.2471	.2517	.2581	.2683	.2864	.3098
L-O	.1180	.1193	.1270	.1340	.1450	.1597	.1830	.2170	.2690	.3300
PC over ocean	.1250	.1400	.1500	.1700	.1850	.2150	.2500	.3000	.3650	.4450
PC over land	.2130	.2210	.2300	.2410	.2540	.2750	.3010	.3400	.3780	.4285
PC over L-O	.1690	.1805	.1900	.2055	.2195	.2450	.2755	.3200	.3715	.4368
MC over ocean	.2550	.2750	.2900	.3150	.3300	.3650	.4000	.4480	.5000	.5600
MC over land	.3000	.3270	.3550	.3820	.4200	.4487	.4945	.5380	.5805	.6320
MC over L-O	.2775	.3010	.3225	.3485	.3750	.4069	.4473	.4930	.5403	.5960
Overcast	.4250	.4350	.4550	.4800	.5000	.5300	.5600	.5900	.6200	.6450

Table 7. Normalized Directional Albedo Function

[L-O = Land-ocean mix
PC = Partly cloudy
MC = Mostly cloudy]

Scene	Solar-zenith-angle bin									
	1	2	3	4	5	6	7	8	9	10
Ocean	1.000	1.079	1.197	1.329	1.513	1.750	2.118	2.671	3.526	4.395
Land	↓	.978	1.019	1.044	1.094	1.164	1.281	1.444	1.688	2.038
Snow	↓	1.004	1.009	1.013	1.016	1.017	1.015	1.005	.974	.928
Desert	↓	1.008	1.018	1.029	1.043	1.062	1.090	1.132	1.209	1.308
L-O	↓	1.011	1.076	1.136	1.229	1.353	1.551	1.839	2.280	2.797
PC over ocean	↓	1.120	1.200	1.360	1.480	1.720	2.000	2.400	2.920	3.560
PC over land	↓	1.038	1.080	1.132	1.192	1.291	1.413	1.596	1.775	2.012
PC over L-O	↓	1.068	1.124	1.216	1.299	1.450	1.630	1.894	2.198	2.584
MC over ocean	↓	1.078	1.137	1.235	1.294	1.431	1.569	1.757	1.961	2.196
MC over land	↓	1.090	1.183	1.273	1.400	1.496	1.648	1.793	1.935	2.107
MC over L-O	↓	1.085	1.162	1.256	1.351	1.466	1.612	1.777	1.947	2.148
Overcast	↓	1.024	1.071	1.129	1.176	1.247	1.318	1.388	1.459	1.518

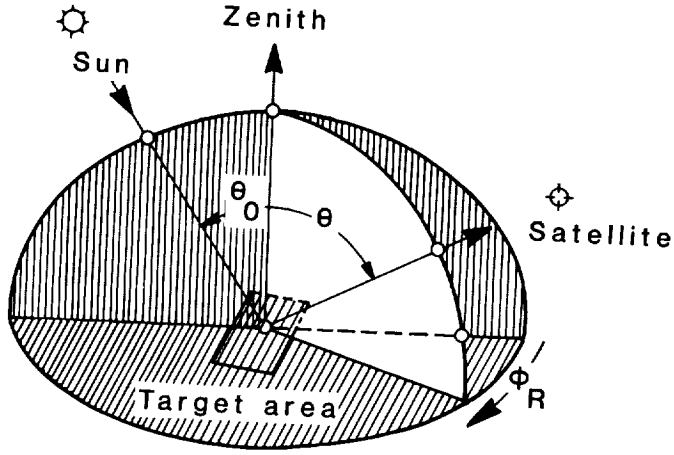


Figure 1. Satellite, Sun, and target geometry.

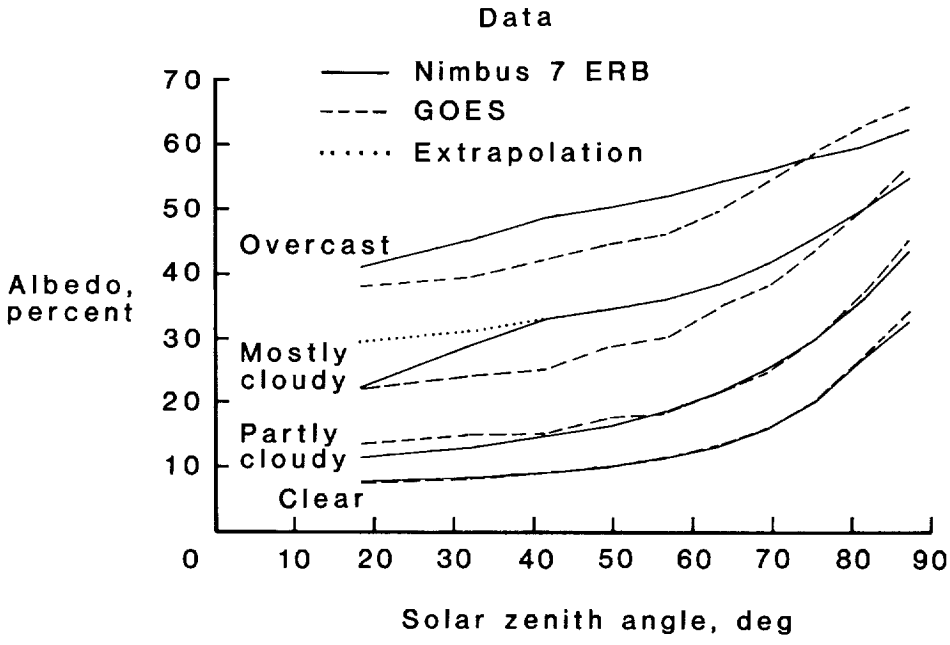


Figure 2. Empirical directional models over ocean.

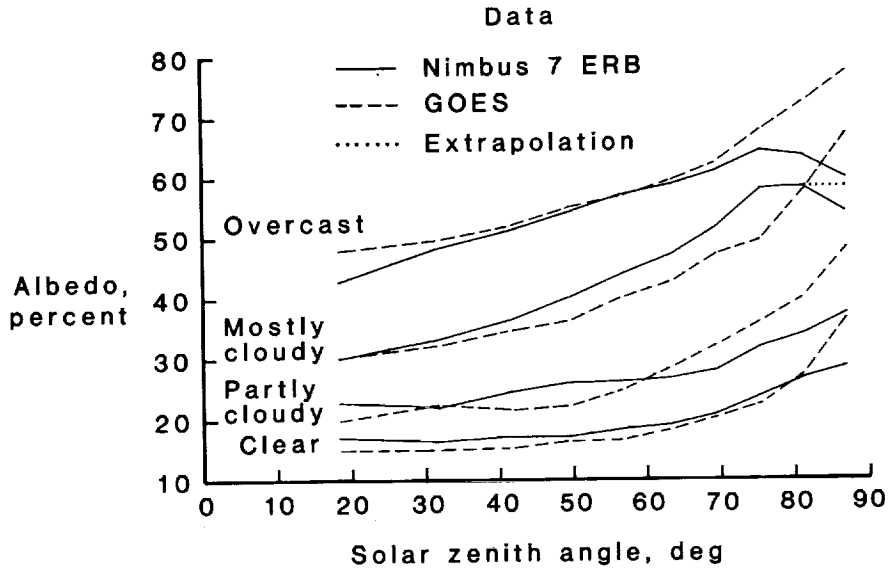


Figure 3. Empirical directional models over land.

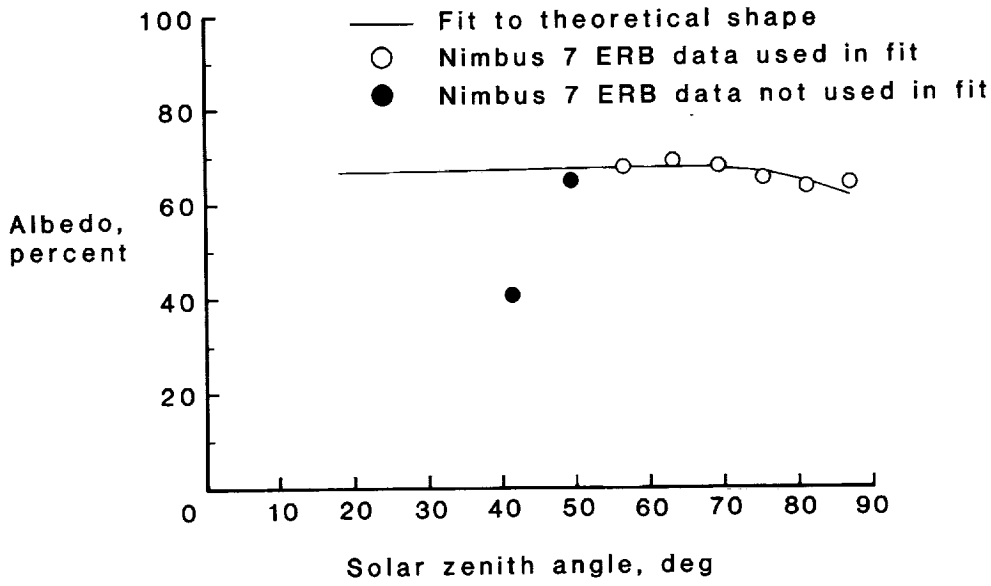


Figure 4. Snow albedo model from least-squares fit of theoretical results (Wiscombe, Welch, and Hall 1984) to Nimbus 7 ERB measurements.

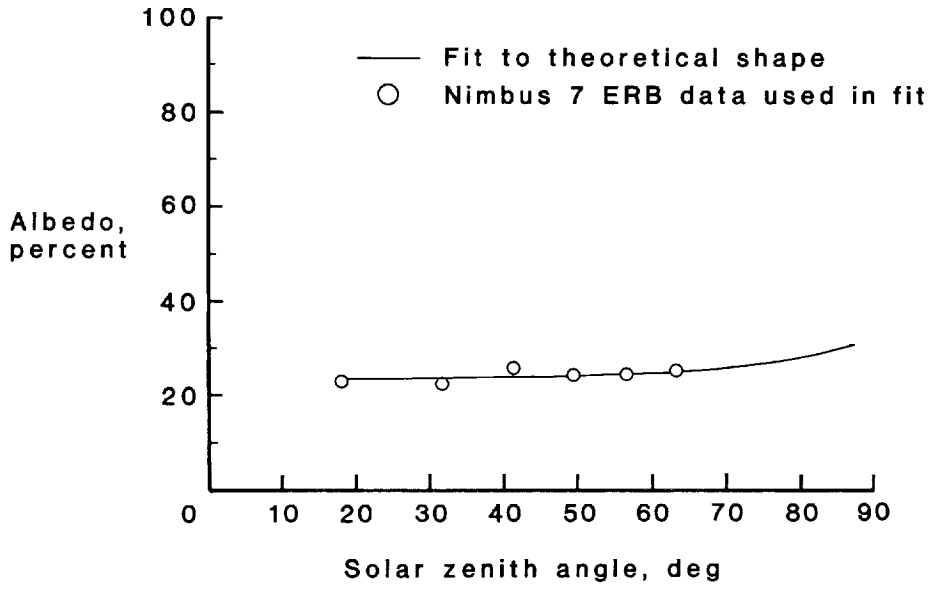


Figure 5. Desert albedo model from least-squares fit of theoretical results (Wiscombe, Welch, and Hall 1984) to Nimbus 7 ERB measurements.

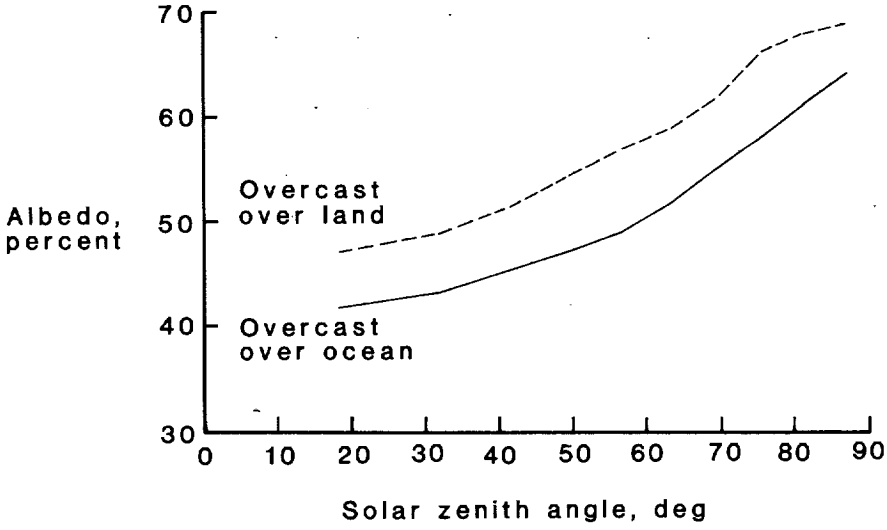


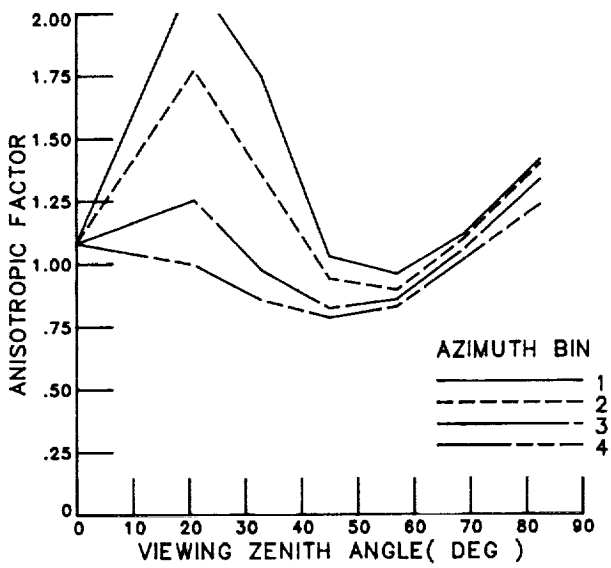
Figure 6. Averaged Nimbus 7 ERB and GOES directional models for overcast scenes.

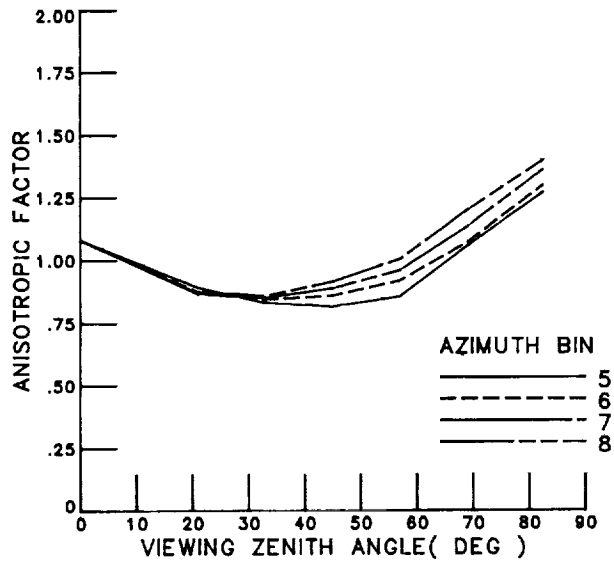
SCENE TYPE : CLEAR OCEAN
DATA 1 - SW ANISOTROPIC FACTOR
2 - STANDARD DEVIATION OF SW RADIANCES(W/M**2/SR)
3 - CORRELATION OF LW AND SW RADIANCES
( ) - DATA SOURCE

SUN ZENITH : .0 - 25.8
MEAN ALBEDO : .0760 (18)
NORMALIZED ALBEDO : 1.0000 (18)

RELATIVE AZIMUTH

BIN NO. / ANGLE(DEG.)		1 0-9	2 9-30	3 30-60	4 60-90	5 90-120	6 120-150	7 150-171	8 171-180
VIEWING ZENITH BIN NO.	ANGLE(DEG.)								
1	0-15	1.08 (11)	1.08 (11)	1.08 (11)	1.08 (11)	1.08 (11)	1.08 (11)	1.08 (11)	1.08 (11)
		10.1 (11)	10.1 (11)	10.1 (11)	10.1 (11)	10.1 (11)	10.1 (11)	10.1 (11)	10.1 (11)
		-.122 (11)	-.122 (11)	-.122 (11)	-.122 (11)	-.122 (11)	-.122 (11)	-.122 (11)	-.122 (11)
2	15-27	2.15 (10)	1.77 (11)	1.25 (11)	1.00 (11)	.89 (11)	.87 (11)	.87 (11)	.87 (11)
		37.1 (10)	21.7 (11)	8.2 (11)	6.1 (11)	5.5 (11)	5.7 (11)	5.5 (11)	5.5 (11)
		.050 (10)	-.079 (11)	-.162 (11)	-.086 (11)	-.087 (11)	-.056 (11)	-.068 (11)	-.099 (11)
3	27-39	1.75 (10)	1.36 (11)	.97 (11)	.86 (11)	.83 (11)	.85 (11)	.85 (11)	.86 (11)
		21.5 (10)	11.4 (11)	6.5 (11)	5.5 (11)	4.9 (11)	5.0 (11)	5.0 (11)	5.3 (11)
		-.065 (10)	-.143 (11)	-.110 (11)	-.067 (11)	-.090 (11)	-.147 (11)	-.152 (11)	-.141 (11)
4	39-51	1.03 (11)	.94 (11)	.82 (11)	.79 (11)	.82 (11)	.86 (11)	.89 (11)	.92 (11)
		8.3 (11)	6.5 (11)	5.1 (11)	5.0 (11)	4.8 (11)	5.2 (11)	5.2 (11)	5.9 (11)
		-.285 (11)	-.155 (11)	-.144 (11)	-.207 (11)	-.150 (11)	-.170 (11)	-.195 (11)	-.218 (11)
5	51-63	.96 (10)	.90 (11)	.86 (11)	.83 (11)	.86 (11)	.92 (11)	.96 (11)	1.00 (11)
		7.5 (10)	6.7 (11)	5.3 (11)	4.9 (11)	4.6 (11)	5.5 (11)	5.6 (11)	6.3 (11)
		-.161 (10)	-.222 (11)	-.203 (11)	-.197 (11)	-.119 (11)	-.156 (11)	-.261 (11)	-.271 (11)
6	63-75	1.12 (11)	1.10 (11)	1.06 (11)	1.02 (11)	1.06 (11)	1.07 (11)	1.13 (11)	1.20 (11)
		8.4 (11)	8.7 (11)	7.0 (11)	6.5 (11)	7.5 (11)	7.0 (11)	6.5 (11)	7.1 (11)
		-.348 (11)	-.397 (11)	-.330 (11)	-.402 (11)	-.427 (11)	-.391 (11)	-.352 (11)	-.355 (11)
7	75-90	1.42 (10)	1.40 (11)	1.33 (11)	1.24 (11)	1.27 (11)	1.30 (11)	1.36 (11)	1.40 (11)
		8.7 (10)	8.9 (11)	8.1 (11)	6.4 (11)	7.7 (11)	8.0 (11)	7.0 (11)	7.6 (11)
		-.293 (10)	-.364 (11)	-.260 (11)	-.319 (11)	-.432 (11)	-.415 (11)	-.382 (11)	-.385 (11)





(a) Solar-zenith-angle bin 1, 0° to 25.84°.

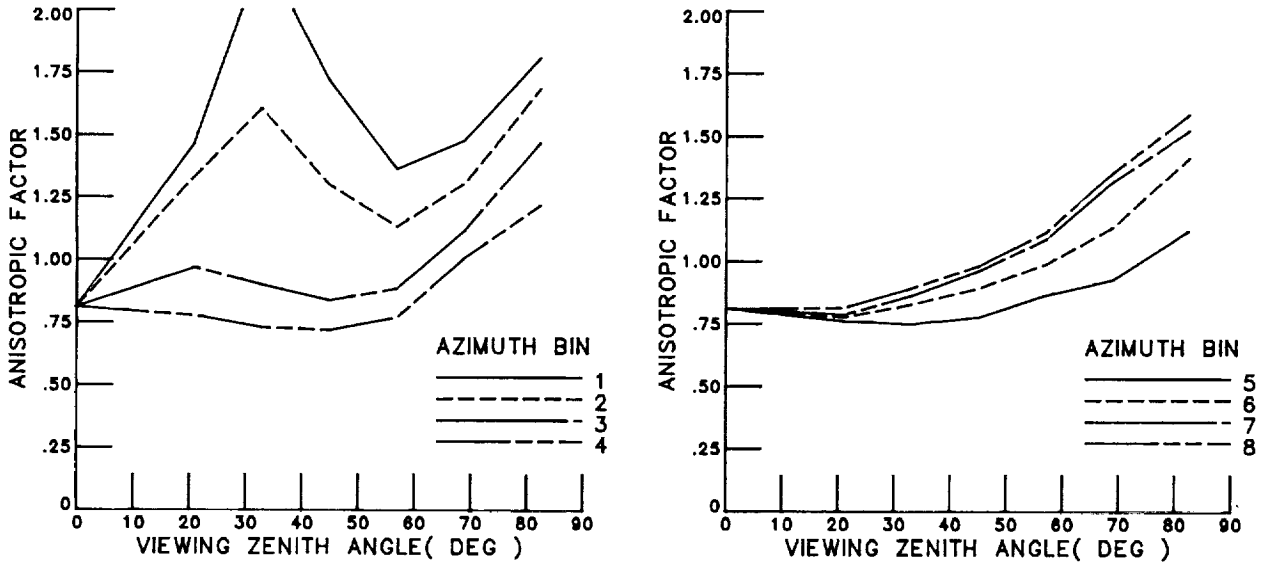
Figure 7. Bidirectional model for clear over ocean. (See table 5 for explanation of data sources.)

SCENE TYPE : CLEAR OCEAN
DATA 1 - SW ANISOTROPIC FACTOR
2 - STANDARD DEVIATION OF SW RADIANCES(W/M**2/SR)
3 - CORRELATION OF LW AND SW RADIANCES
( ) - DATA SOURCE

SUN ZENITH : 25.8 - 36.9
MEAN ALBEDO : .0820 (18)
NORMALIZED ALBEDO : 1.0789 (18)

RELATIVE AZIMUTH

BIN NO. / VIEWING ZENITH ANGLE(DEG.)		1 0-9	2 9-30	3 30-60	4 60-90	5 90-120	6 120-150	7 150-171	8 171-180
1	0-15	.81 (11)	.81 (11)	.81 (11)	.81 (11)	.81 (11)	.81 (11)	.81 (11)	.81 (11)
		5.1 (11)	5.1 (11)	5.1 (11)	5.1 (11)	5.1 (11)	5.1 (11)	5.1 (11)	5.1 (11)
		-.158 (11)	-.158 (11)	-.156 (11)	-.158 (11)	-.158 (11)	-.158 (11)	-.158 (11)	-.158 (11)
2	15-27	1.46 (10)	1.33 (11)	.97 (11)	.78 (11)	.76 (11)	.78 (11)	.79 (11)	.82 (11)
		17.7 (10)	10.3 (11)	5.8 (11)	5.1 (11)	5.1 (11)	5.0 (11)	5.2 (11)	4.7 (11)
		-.087 (10)	-.167 (11)	-.176 (11)	-.139 (11)	-.097 (11)	-.090 (11)	-.134 (11)	-.089 (11)
3	27-39	2.23 (10)	1.61 (11)	.90 (11)	.73 (11)	.75 (11)	.83 (11)	.86 (11)	.89 (10)
		32.4 (10)	13.9 (11)	5.7 (11)	4.6 (11)	4.7 (11)	5.3 (11)	5.0 (11)	6.0 (10)
		.080 (10)	-.164 (11)	-.200 (11)	-.057 (11)	-.155 (11)	-.088 (11)	-.163 (11)	-.095 (10)
4	39-51	1.72 (10)	1.30 (11)	.84 (11)	.72 (11)	.78 (11)	.89 (11)	.96 (11)	.98 (11)
		15.7 (10)	10.8 (11)	5.6 (11)	4.3 (11)	4.2 (11)	5.7 (11)	5.5 (11)	5.6 (11)
		-.029 (10)	.045 (11)	-.158 (11)	-.130 (11)	-.075 (11)	-.148 (11)	-.071 (11)	-.067 (11)
5	51-63	1.36 (10)	1.13 (11)	.89 (11)	.77 (10)	.87 (11)	.99 (11)	1.09 (11)	1.12 (11)
		10.2 (10)	8.3 (11)	6.2 (11)	4.8 (10)	5.5 (11)	5.8 (11)	6.4 (11)	6.1 (11)
		-.009 (10)	-.078 (11)	-.128 (11)	-.168 (10)	-.027 (11)	-.041 (11)	-.153 (11)	-.095 (11)
6	63-75	1.48 (11)	1.31 (11)	1.12 (11)	1.01 (10)	.93 (10)	1.14 (10)	1.32 (11)	1.36 (11)
		11.7 (11)	10.2 (11)	8.1 (11)	6.9 (10)	5.2 (10)	6.7 (10)	7.2 (11)	8.1 (11)
		-.196 (11)	-.318 (11)	-.221 (11)	-.326 (10)	.188 (10)	.095 (10)	-.221 (11)	-.255 (11)
7	75-90	1.81 (10)	1.69 (11)	1.47 (11)	1.22 (10)	1.12 (5)	1.42 (7)	1.53 (11)	1.59 (11)
		11.5 (10)	12.2 (11)	9.1 (11)	6.6 (10)	5.9 (5)	6.6 (7)	7.3 (11)	8.3 (11)
		-.106 (10)	-.397 (11)	-.424 (11)	-.318 (10)	-.015 (5)	-.119 (7)	-.222 (11)	-.175 (11)



(b) Solar-zenith-angle bin 2, 25.84° to 36.87°.

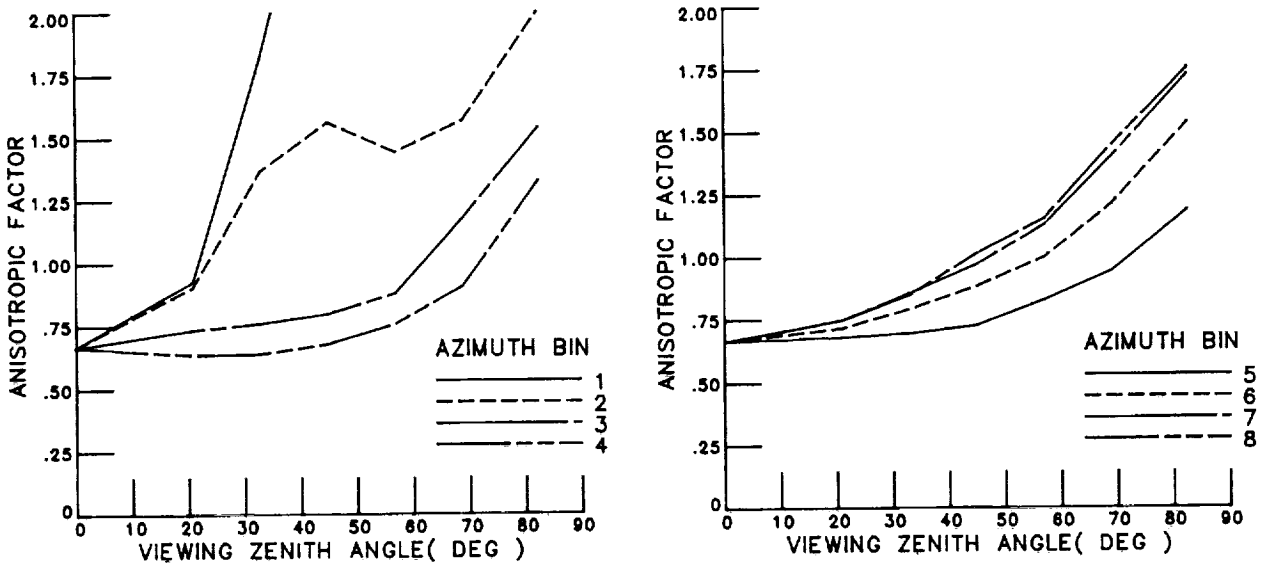
Figure 7. Continued.

SCENE TYPE : CLEAR OCEAN
DATA 1 - SW ANISOTROPIC FACTOR
2 - STANDARD DEVIATION OF SW RADIANCES(W/M**2/SR)
3 - CORRELATION OF LW AND SW RADIANCES
( ) - DATA SOURCE

SUN ZENITH : 36.9 - 45.6
MEAN ALBEDO : .0910 (18)
NORMALIZED ALBEDO : 1.1974 (18)

RELATIVE AZIMUTH

BIN NO. / ANGLE(DEG.)		1 0-9	2 9-30	3 30-60	4 60-90	5 90-120	6 120-150	7 150-171	8 171-180
VIEWING ZENITH BIN NO.	ANGLE(DEG.)								
1	0-15	.66 (11)	.66 (11)	.66 (11)	.66 (11)	.66 (11)	.66 (11)	.66 (11)	.66 (11)
		4.2 (11)	4.2 (11)	4.2 (11)	4.2 (11)	4.2 (11)	4.2 (11)	4.2 (11)	4.2 (11)
		-.112 (11)	-.112 (11)	-.112 (11)	-.112 (11)	-.112 (11)	-.112 (11)	-.112 (11)	-.112 (11)
2	15-27	.93 (10)	.90 (10)	.73 (11)	.63 (11)	.66 (11)	.72 (11)	.75 (11)	.75 (10)
		6.1 (10)	6.0 (10)	4.8 (11)	3.9 (11)	4.6 (11)	5.3 (11)	4.6 (11)	4.1 (10)
		-.073 (10)	-.071 (10)	-.097 (11)	-.061 (11)	-.069 (11)	-.145 (11)	-.072 (11)	-.147 (10)
3	27-39	1.81 (10)	1.37 (10)	.76 (10)	.64 (10)	.70 (10)	.79 (11)	.86 (10)	.85 (10)
		18.6 (10)	12.1 (10)	5.4 (10)	4.0 (10)	4.2 (10)	4.8 (11)	5.3 (10)	5.3 (10)
		-.064 (10)	-.073 (10)	-.117 (10)	-.044 (10)	-.076 (10)	-.032 (11)	-.116 (10)	-.088 (10)
4	39-51	2.64 (10)	1.56 (11)	.80 (11)	.68 (11)	.73 (11)	.88 (11)	.97 (11)	1.02 (10)
		34.6 (10)	16.2 (11)	6.0 (11)	4.6 (11)	3.9 (11)	5.3 (11)	5.3 (11)	6.0 (10)
		.068 (10)	.010 (11)	-.129 (11)	-.055 (11)	-.029 (11)	-.141 (11)	-.079 (11)	-.185 (10)
5	51-63	2.49 (10)	1.44 (10)	.86 (10)	.76 (10)	.83 (10)	1.00 (10)	1.13 (11)	1.15 (10)
		21.0 (10)	13.9 (10)	6.3 (10)	4.6 (10)	5.1 (10)	5.4 (10)	5.6 (11)	5.7 (10)
		-.201 (10)	-.065 (10)	-.167 (10)	-.118 (10)	-.096 (10)	-.270 (10)	-.164 (11)	-.152 (10)
6	63-75	2.14 (10)	1.57 (11)	1.16 (11)	.91 (10)	.94 (10)	1.21 (10)	1.40 (11)	1.45 (11)
		16.7 (10)	12.8 (11)	8.6 (11)	5.8 (10)	4.4 (10)	7.2 (10)	7.1 (11)	7.5 (11)
		-.172 (10)	-.313 (11)	-.330 (11)	-.210 (10)	.072 (10)	-.283 (10)	-.174 (11)	-.250 (11)
7	75-90	2.45 (10)	2.00 (10)	1.54 (10)	1.33 (8)	1.15 (5)	1.54 (8)	1.73 (11)	1.75 (10)
		18.3 (10)	13.9 (10)	9.9 (10)	7.4 (8)	5.6 (5)	6.1 (8)	7.8 (11)	7.9 (10)
		-.196 (10)	-.251 (10)	-.207 (10)	-.345 (8)	-.200 (5)	-.601 (8)	-.243 (11)	-.229 (10)



(c) Solar-zenith-angle bin 3, 36.87° to 45.57°.

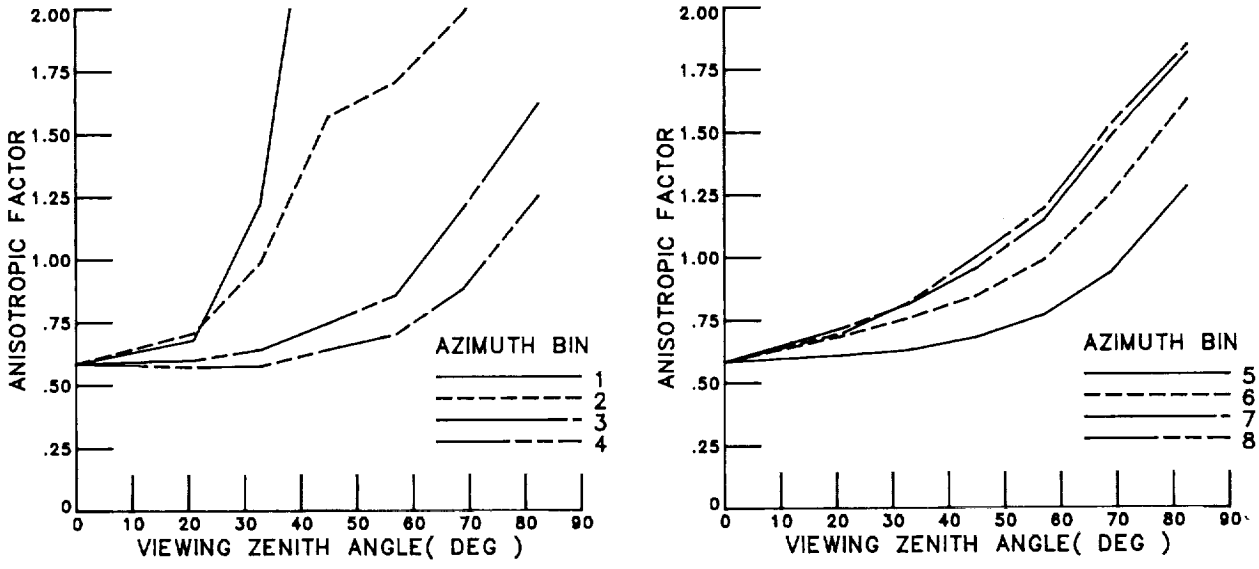
Figure 7. Continued.

SCENE TYPE : CLEAR OCEAN
DATA 1 - SW ANISOTROPIC FACTOR
2 - STANDARD DEVIATION OF SW RADIANCES(W/M**2/SR)
3 - CORRELATION OF LW AND SW RADIANCES
( ) - DATA SOURCE

SUN ZENITH : 45.6 - 53.1
MEAN ALBEDO : .1010 (18)
NORMALIZED ALBEDO : 1.3289 (18)

RELATIVE AZIMUTH

VIEWING ZENITH BIN NO.	ANGLE(DEG.)	BIN NO. 1 0-9	2 9-30	3 30-60	4 60-90	5 90-120	6 120-150	7 150-171	8 171-180
1	0-15	.58 (11)	.58 (11)	.58 (11)	.58 (11)	.58 (11)	.58 (11)	.58 (11)	.58 (11)
		3.9 (11)	3.9 (11)	3.9 (11)	3.9 (11)	3.9 (11)	3.9 (11)	3.9 (11)	3.9 (11)
		-.048 (11)	-.048 (11)	-.048 (11)	-.048 (11)	-.048 (11)	-.048 (11)	-.048 (11)	-.048 (11)
2	15-27	.68 (10)	.71 (10)	.60 (10)	.57 (10)	.61 (10)	.69 (10)	.72 (10)	.70 (10)
		4.1 (10)	4.2 (10)	3.4 (10)	3.7 (10)	3.4 (10)	5.0 (10)	4.6 (10)	4.6 (10)
		-.051 (10)	-.053 (10)	-.083 (10)	-.142 (10)	-.110 (10)	-.249 (10)	-.092 (10)	-.129 (10)
3	27-39	1.22 (9)	.99 (10)	.64 (10)	.58 (10)	.63 (10)	.76 (10)	.82 (10)	.82 (9)
		8.0 (9)	8.0 (10)	4.5 (10)	2.9 (10)	3.3 (10)	4.0 (10)	4.2 (10)	4.2 (9)
		.071 (9)	-.097 (10)	-.165 (10)	-.037 (10)	.026 (10)	-.065 (10)	-.069 (10)	-.051 (9)
4	39-51	2.96 (10)	1.57 (10)	.75 (10)	.64 (10)	.68 (10)	.85 (10)	.96 (10)	1.00 (10)
		28.3 (10)	17.0 (10)	5.2 (10)	3.7 (10)	3.3 (10)	4.6 (10)	4.9 (10)	5.4 (10)
		-.103 (10)	.018 (10)	-.229 (10)	-.055 (10)	-.103 (10)	-.176 (10)	-.109 (10)	-.129 (10)
5	51-63	3.96 (10)	1.71 (10)	.86 (10)	.70 (10)	.77 (10)	.99 (10)	1.15 (10)	1.19 (10)
		36.6 (10)	21.0 (10)	6.3 (10)	3.7 (10)	3.5 (10)	5.0 (10)	5.0 (10)	5.1 (10)
		-.077 (10)	-.129 (10)	-.102 (10)	-.016 (10)	-.144 (10)	-.135 (10)	-.206 (10)	-.143 (10)
6	63-75	3.66 (10)	1.98 (10)	1.20 (10)	.86 (8)	.94 (9)	1.25 (10)	1.48 (11)	1.53 (10)
		28.4 (10)	19.7 (10)	9.4 (10)	5.4 (8)	5.1 (9)	5.5 (10)	7.9 (11)	7.9 (10)
		-.163 (10)	-.256 (10)	-.348 (10)	.016 (8)	.024 (9)	-.228 (10)	-.256 (11)	-.286 (10)
7	75-90	3.75 (10)	2.39 (10)	1.62 (9)	1.25 (5)	1.26 (5)	1.63 (8)	1.82 (10)	1.85 (10)
		27.2 (10)	19.0 (10)	10.9 (9)	7.1 (5)	5.5 (5)	4.6 (8)	7.1 (10)	8.1 (10)
		-.149 (10)	-.350 (10)	-.330 (9)	-.169 (5)	-.178 (5)	-.403 (8)	-.024 (10)	-.194 (10)



(d) Solar-zenith-angle bin 4, 45.57° to 53.13°.

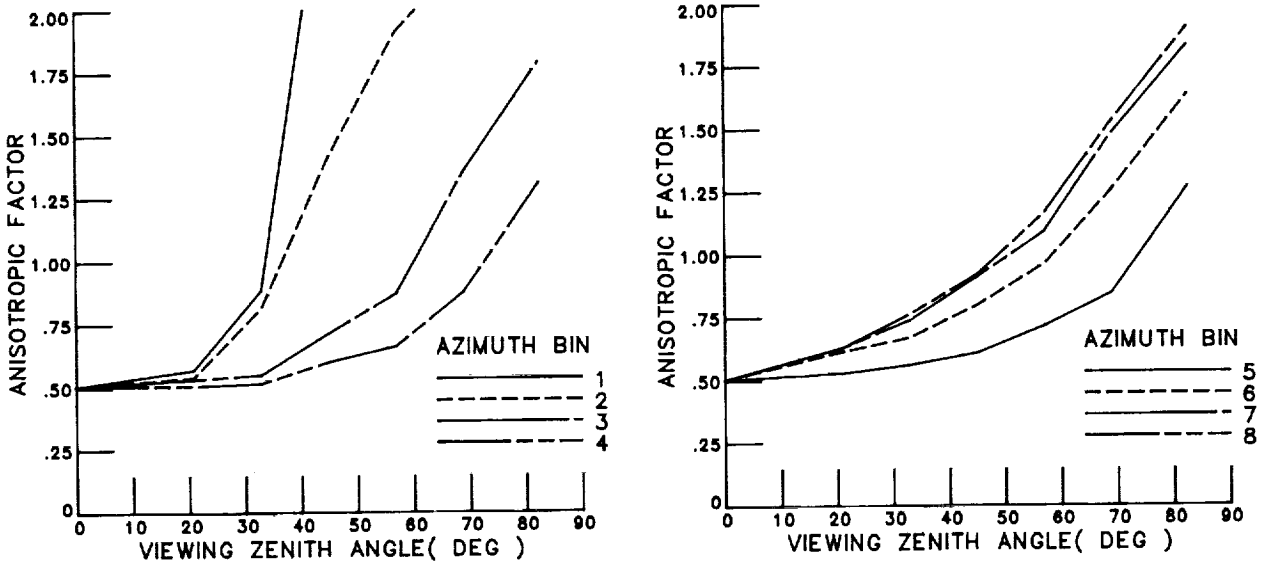
Figure 7. Continued.

SCENE TYPE : CLEAR OCEAN
DATA 1 - SW ANISOTROPIC FACTOR
2 - STANDARD DEVIATION OF SW RADIANCES(W/M**2/SR)
3 - CORRELATION OF LW AND SW RADIANCES
( ) - DATA SOURCE

SUN ZENITH : 53.1 - 60.0
MEAN ALBEDO : .1150 (18)
NORMALIZED ALBEDO : 1.5132 (18)

RELATIVE AZIMUTH

BIN NO. / ANGLE(DEG.)		1 0-9	2 9-30	3 30-60	4 60-90	5 90-120	6 120-150	7 150-171	8 171-180
VIEWING ZENITH BIN NO.	ANGLE(DEG.)								
1	0-15	.50 (11)	.50 (11)	.50 (11)	.50 (11)	.50 (11)	.50 (11)	.50 (11)	.50 (11)
		3.2 (11)	3.2 (11)	3.2 (11)	3.2 (11)	3.2 (11)	3.2 (11)	3.2 (11)	3.2 (11)
		-.079 (11)	-.079 (11)	-.079 (11)	-.079 (11)	-.079 (11)	-.079 (11)	-.079 (11)	-.079 (11)
2	15-27	.57 (9)	.54 (10)	.53 (10)	.50 (10)	.53 (10)	.62 (10)	.63 (10)	.63 (10)
		3.0 (9)	3.6 (10)	4.1 (10)	3.2 (10)	3.2 (10)	4.0 (10)	3.4 (10)	3.5 (10)
		-.028 (9)	.017 (10)	-.147 (10)	-.035 (10)	-.049 (10)	-.095 (10)	-.088 (10)	-.253 (10)
3	27-39	.86 (8)	.81 (10)	.55 (10)	.51 (9)	.56 (9)	.67 (10)	.74 (10)	.76 (8)
		7.5 (8)	5.7 (10)	2.9 (10)	3.4 (9)	2.7 (9)	4.3 (10)	3.9 (10)	4.1 (8)
		-.401 (8)	-.238 (10)	-.152 (10)	.109 (9)	.070 (9)	-.186 (10)	-.188 (10)	-.009 (8)
4	39-51	2.61 (9)	1.41 (10)	.71 (10)	.60 (10)	.61 (10)	.80 (10)	.91 (10)	.92 (10)
		20.9 (9)	13.7 (10)	4.5 (10)	3.6 (10)	2.7 (10)	3.4 (10)	4.1 (10)	4.3 (10)
		-.176 (9)	-.157 (10)	-.521 (10)	-.221 (10)	.006 (10)	-.240 (10)	-.105 (10)	-.181 (10)
5	51-63	5.08 (9)	1.91 (10)	.87 (9)	.66 (9)	.71 (9)	.96 (9)	1.09 (10)	1.16 (9)
		54.5 (9)	24.6 (10)	5.4 (9)	3.9 (9)	3.2 (9)	5.5 (9)	4.2 (10)	5.3 (9)
		-.211 (9)	-.127 (10)	-.296 (9)	-.214 (9)	-.039 (9)	-.351 (9)	-.137 (10)	-.072 (9)
6	63-75	6.45 (10)	2.21 (10)	1.35 (10)	.88 (7)	.85 (8)	1.25 (9)	1.48 (10)	1.53 (10)
		62.5 (10)	22.1 (10)	10.7 (10)	5.5 (7)	4.1 (8)	7.5 (9)	6.9 (10)	7.1 (10)
		-.035 (10)	-.304 (10)	-.508 (10)	-.072 (7)	-.088 (8)	-.105 (9)	-.190 (10)	-.251 (10)
7	75-90	7.12 (9)	3.05 (9)	1.79 (8)	1.31 (5)	1.27 (5)	1.64 (7)	1.83 (9)	1.90 (8)
		64.2 (9)	30.4 (9)	9.2 (8)	6.6 (5)	5.1 (5)	4.4 (7)	5.8 (9)	6.6 (8)
		.230 (9)	-.178 (9)	-.231 (6)	-.075 (5)	-.007 (5)	.227 (7)	-.111 (9)	-.239 (8)



(e) Solar-zenith-angle bin 5, 53.13° to 60.00°.

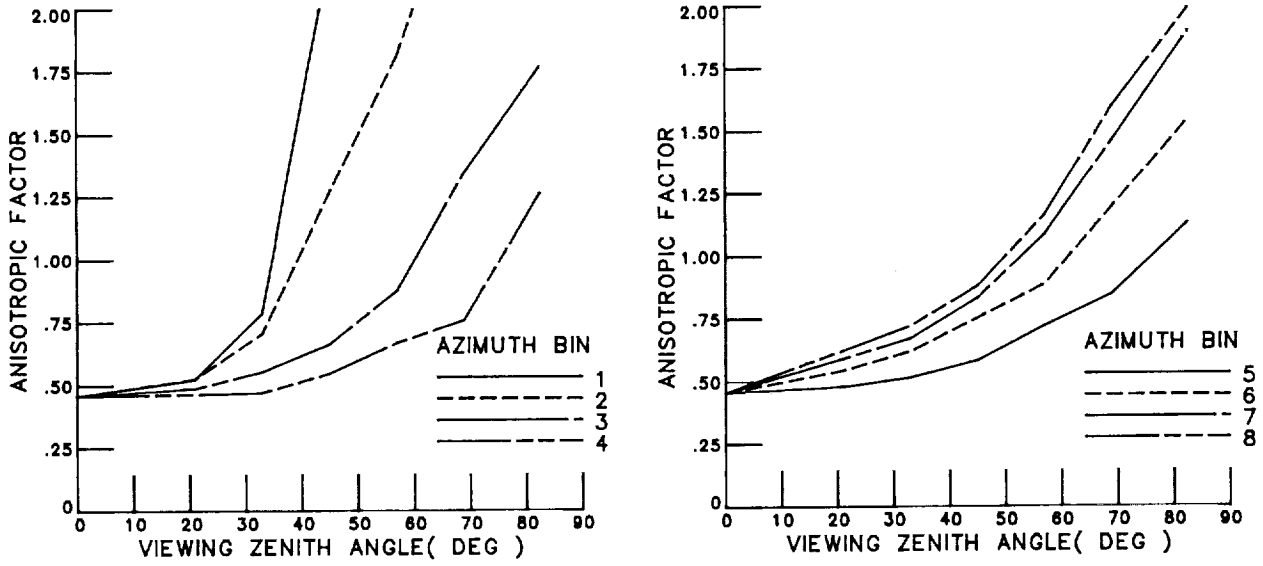
Figure 7. Continued.

SCENE TYPE : CLEAR OCEAN
DATA 1 - SW ANISOTROPIC FACTOR
2 - STANDARD DEVIATION OF SW RADIANCES(W/M**2/SR)
3 - CORRELATION OF LW AND SW RADIANCES
( ) - DATA SOURCE

SUN ZENITH : 60.0 - 66.4
MEAN ALBEDO : .1330 (18)
NORMALIZED ALBEDO : 1.7500 (18)

RELATIVE AZIMUTH

BIN NO.	1	2	3	4	5	6	7	8
VIEWING ZENITH ANGLE(DEG.)	0-9	9-30	30-60	60-90	90-120	120-150	150-171	171-180
1 0-15	.46 (10)	.46 (10)	.46 (10)	.46 (10)	.46 (10)	.46 (10)	.46 (10)	.46 (10)
	2.6 (10)	2.6 (10)	2.6 (10)	2.6 (10)	2.6 (10)	2.6 (10)	2.6 (10)	2.6 (10)
	-.032 (10)	-.032 (10)	-.032 (10)	-.032 (10)	-.032 (10)	-.032 (10)	-.032 (10)	-.032 (10)
2 15-27	.52 (8)	.52 (9)	.49 (9)	.46 (10)	.48 (10)	.54 (10)	.59 (9)	.62 (8)
	3.2 (8)	2.3 (9)	2.5 (9)	2.6 (10)	3.0 (10)	3.0 (10)	3.6 (9)	9.2 (8)
	.014 (8)	-.068 (9)	-.306 (9)	-.212 (10)	-.049 (10)	-.172 (10)	-.095 (9)	-.031 (8)
3 27-39	.79 (8)	.71 (9)	.55 (9)	.47 (8)	.52 (8)	.62 (9)	.67 (8)	.72 (7)
	4.2 (8)	4.4 (9)	3.1 (9)	2.3 (8)	2.3 (8)	3.4 (9)	4.5 (8)	4.6 (7)
	-.127 (8)	-.019 (9)	-.397 (9)	-.136 (8)	.078 (8)	.143 (9)	-.212 (8)	-.353 (7)
4 39-51	2.16 (8)	1.26 (9)	.66 (9)	.55 (8)	.56 (8)	.75 (9)	.83 (10)	.88 (8)
	18.1 (8)	9.9 (9)	4.6 (9)	2.2 (8)	2.9 (8)	4.2 (9)	3.4 (10)	3.6 (8)
	-.175 (8)	-.116 (9)	-.283 (9)	-.185 (8)	.010 (8)	-.056 (9)	-.074 (10)	-.380 (8)
5 51-63	5.36 (8)	1.81 (8)	.88 (8)	.67 (7)	.72 (7)	.89 (8)	1.09 (9)	1.16 (8)
	58.9 (8)	21.2 (8)	5.7 (8)	3.5 (7)	3.0 (7)	5.4 (8)	4.6 (9)	7.5 (8)
	-.162 (8)	-.200 (8)	-.089 (8)	.288 (7)	-.537 (7)	-.368 (8)	-.230 (9)	-.559 (8)
6 63-75	9.65 (9)	2.58 (9)	1.34 (8)	.76 (7)	.85 (6)	1.20 (7)	1.46 (9)	1.60 (9)
	82.7 (9)	38.0 (9)	12.2 (8)	2.8 (7)	3.4 (6)	4.8 (7)	7.0 (9)	8.1 (9)
	-.186 (9)	-.447 (9)	-.517 (8)	-.087 (7)	-.415 (6)	-.499 (7)	-.312 (9)	-.420 (9)
7 75-90	10.56 (7)	3.41 (8)	1.77 (7)	1.26 (5)	1.13 (15)	1.55 (5)	1.90 (8)	1.99 (9)
	62.3 (7)	33.4 (8)	10.9 (7)	6.9 (5)	5.0 (15)	6.3 (5)	7.7 (8)	6.2 (9)
	-.236 (7)	-.663 (8)	-.406 (7)	-.247 (5)	-.360 (15)	-.362 (5)	-.224 (8)	-.320 (9)



(f) Solar-zenith-angle bin 6, 60.00° to 66.42°.

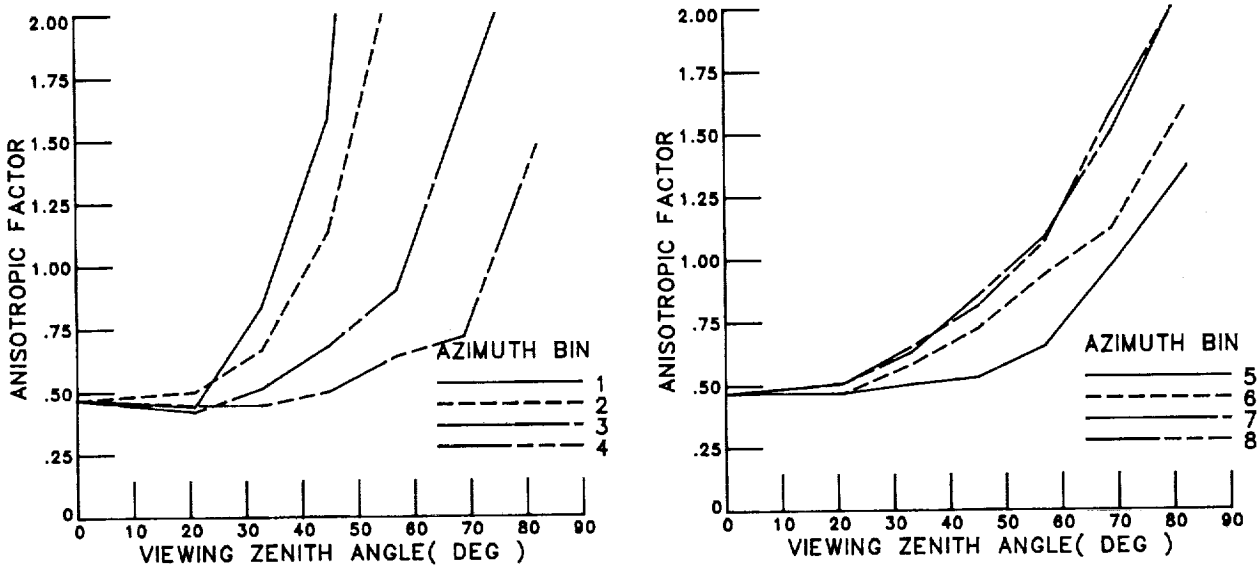
Figure 7. Continued.

SCENE TYPE : CLEAR OCEAN
DATA 1 - SW ANISOTROPIC FACTOR
2 - STANDARD DEVIATION OF SW RADIANCES(W/M**2/SR)
3 - CORRELATION OF LW AND SW RADIANCES
( ) - DATA SOURCE

SUN ZENITH : 66.4 - 72.5
MEAN ALBEDO : .1610 (18)
NORMALIZED ALBEDO : 2.1184 (18)

RELATIVE AZIMUTH

VIEWING ZENITH BIN NO.	VIEWING ZENITH ANGLE(DEG.)	BIN NO. / ANGLE(DEG.) 1 0-9	2 9-30	3 30-60	4 60-90	5 90-120	6 120-150	7 150-171	8 171-180
1	0-15	.47 (10)	.47 (10)	.47 (10)	.47 (10)	.47 (10)	.47 (10)	.47 (10)	.47 (10)
		2.5 (15)	2.5 (15)	2.5 (15)	2.5 (15)	2.5 (15)	2.5 (15)	2.5 (15)	2.5 (15)
		-.474 (10)	-.474 (10)	-.474 (10)	-.474 (10)	-.474 (10)	-.474 (10)	-.474 (10)	-.474 (10)
2	15-27	.44 (7)	.50 (7)	.42 (8)	.45 (6)	.47 (6)	.47 (8)	.51 (8)	.51 (8)
		2.6 (7)	2.5 (7)	2.2 (8)	2.0 (15)	2.2 (15)	2.0 (8)	2.2 (8)	2.0 (8)
		-.060 (7)	-.379 (7)	.095 (8)	-.134 (6)	-.209 (6)	-.079 (8)	-.012 (8)	-.018 (8)
3	27-39	.83 (15)	.67 (6)	.51 (8)	.44 (8)	.50 (7)	.58 (6)	.63 (8)	.65 (7)
		4.8 (15)	4.3 (6)	2.6 (8)	1.4 (8)	2.1 (7)	3.3 (6)	3.3 (8)	2.5 (7)
		.041 (15)	-.120 (6)	.075 (8)	-.138 (8)	-.319 (7)	-.251 (6)	-.306 (8)	-.059 (7)
4	39-51	1.59 (7)	1.14 (8)	.68 (8)	.50 (7)	.53 (7)	.72 (8)	.85 (8)	.81 (7)
		8.1 (7)	9.5 (6)	4.4 (8)	2.0 (7)	1.3 (7)	5.7 (6)	3.9 (8)	2.9 (7)
		.491 (7)	-.249 (8)	.129 (8)	.391 (7)	-.153 (7)	-.299 (8)	-.114 (8)	-.393 (7)
5	51-63	4.47 (7)	2.19 (7)	.90 (7)	.64 (6)	.65 (7)	.94 (7)	1.09 (15)	1.07 (6)
		34.0 (7)	15.9 (7)	6.1 (7)	3.0 (6)	2.0 (7)	3.2 (7)	4.5 (15)	4.3 (6)
		-.067 (7)	-.037 (7)	-.352 (7)	.252 (6)	.577 (7)	-.110 (7)	-.175 (15)	-.259 (6)
6	63-75	10.20 (7)	2.46 (8)	1.64 (7)	.72 (15)	.97 (6)	1.12 (7)	1.51 (8)	1.58 (8)
		80.9 (7)	29.4 (8)	14.5 (7)	11.1 (6)	4.9 (6)	4.5 (7)	6.5 (8)	7.6 (8)
		.143 (7)	-.177 (8)	.230 (7)	-.005 (6)	.169 (6)	-.474 (7)	-.217 (8)	-.423 (8)
7	75-90	11.41 (15)	3.26 (7)	2.45 (5)	1.49 (15)	1.37 (15)	1.62 (6)	2.12 (8)	2.09 (7)
		55.6 (5)	30.8 (7)	22.6 (5)	11.7 (15)	2.0 (5)	10.1 (6)	15.7 (8)	9.2 (7)
		-.279 (5)	-.700 (7)	-.235 (5)	.083 (15)	.577 (5)	-.349 (6)	-.223 (8)	-.523 (7)



(g) Solar-zenith-angle bin 7, 66.42° to 72.54°.

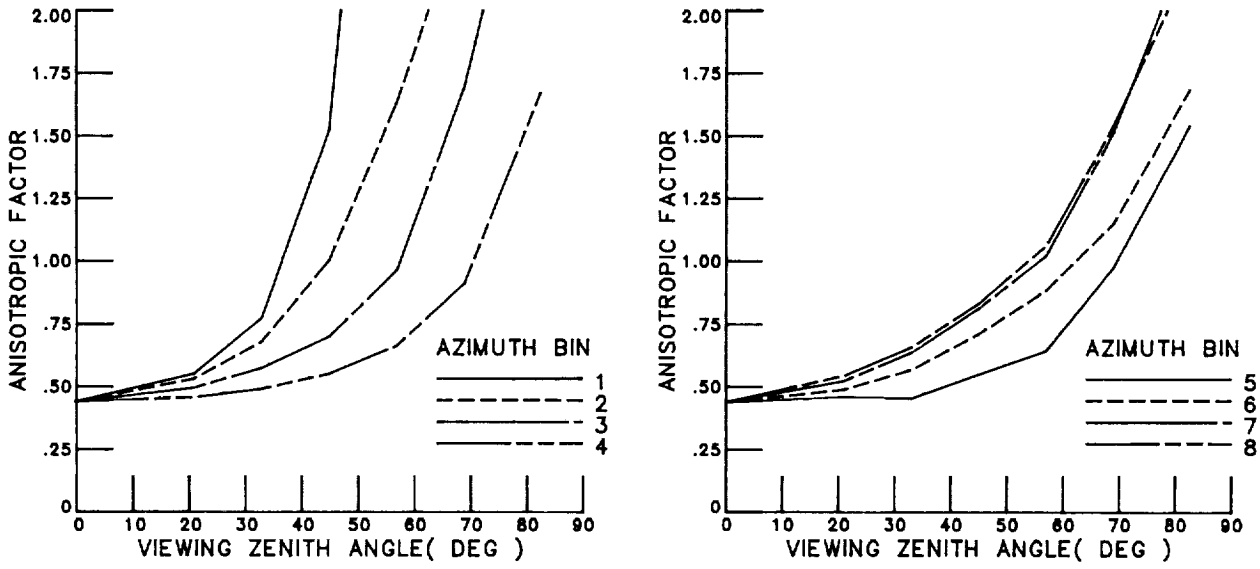
Figure 7. Continued.

SCENE TYPE : CLEAR OCEAN
DATA 1 - SW ANISOTROPIC FACTOR
2 - STANDARD DEVIATION OF SW RADIANCES(W/M**2/SR)
3 - CORRELATION OF LW AND SW RADIANCES
( ) - DATA SOURCE

SUN ZENITH : 72.5 - 78.5
MEAN ALBEDO : .2C30 (18)
NORMALIZED ALBEDO : 2.6711 (18)

RELATIVE AZIMUTH

BIN NO. / ANGLE(DEG.)		1 0-9	2 9-30	3 30-60	4 60-90	5 90-120	6 120-150	7 150-171	8 171-180
VIEWING ZENITH BIN NO.	ANGLE(DEG.)								
1	0-15	.44 (12) 2.1 (13) .000 (0)	.44 (12) 2.1 (13) .000 (0)	.44 (12) 2.1 (13) .000 (0)	.44 (12) 2.1 (13) .000 (0)	.44 (12) 2.1 (13) .000 (0)	.44 (12) 2.1 (13) .000 (0)	.44 (12) 2.1 (13) .000 (0)	.44 (12) 2.1 (13) .000 (0)
2	15-27	.55 (12) 2.9 (13) .000 (0)	.53 (12) 2.4 (13) .000 (0)	.49 (12) 2.3 (13) .000 (0)	.46 (12) 1.9 (13) .000 (0)	.46 (12) 1.9 (13) .000 (0)	.49 (12) 1.9 (13) .000 (0)	.52 (12) 2.0 (13) .000 (0)	.54 (12) 1.9 (13) .000 (0)
3	27-39	.77 (12) 4.0 (13) .000 (0)	.68 (12) 4.0 (13) .000 (0)	.57 (12) 2.6 (13) .000 (0)	.49 (12) 1.4 (13) .000 (0)	.45 (12) 1.7 (13) .000 (0)	.57 (12) 2.9 (13) .000 (0)	.64 (12) 3.0 (13) .000 (0)	.66 (12) 2.2 (13) .000 (0)
4	39-51	1.52 (12) 7.0 (13) .000 (0)	1.00 (12) 7.5 (13) .000 (0)	.70 (12) 4.1 (13) .000 (0)	.55 (12) 2.0 (13) .000 (0)	.55 (12) 1.2 (13) .000 (0)	.71 (12) 5.1 (13) .000 (0)	.81 (12) 3.3 (13) .000 (0)	.83 (12) 2.7 (13) .000 (0)
5	51-63	4.39 (12) 30.1 (13) .000 (0)	1.64 (12) 10.7 (13) .000 (0)	.97 (12) 5.9 (13) .000 (0)	.66 (12) 2.8 (13) .000 (0)	.64 (12) 1.8 (13) .000 (0)	.89 (12) 2.8 (13) .000 (0)	1.02 (12) 3.8 (13) .000 (0)	1.06 (12) 3.8 (13) .000 (0)
6	63-75	9.42 (12) 65.1 (13) .000 (0)	2.42 (12) 25.9 (13) .000 (0)	1.70 (12) 13.5 (13) .000 (0)	.91 (12) 12.8 (13) .000 (0)	.98 (12) 4.4 (13) .000 (0)	1.15 (12) 4.1 (13) .000 (0)	1.52 (12) 5.9 (13) .000 (0)	1.55 (12) 6.7 (13) .000 (0)
7	75-90	12.12 (12) 53.4 (13) .000 (0)	3.19 (12) 27.1 (13) .000 (0)	2.96 (12) 24.6 (13) .000 (0)	1.67 (12) 11.8 (13) .000 (0)	1.54 (12) 2.0 (13) .000 (0)	1.69 (12) 9.4 (13) .000 (0)	2.29 (12) 15.3 (13) .000 (0)	2.19 (12) 8.7 (13) .000 (0)



(h) Solar-zenith-angle bin 8, 72.54° to 78.46°.

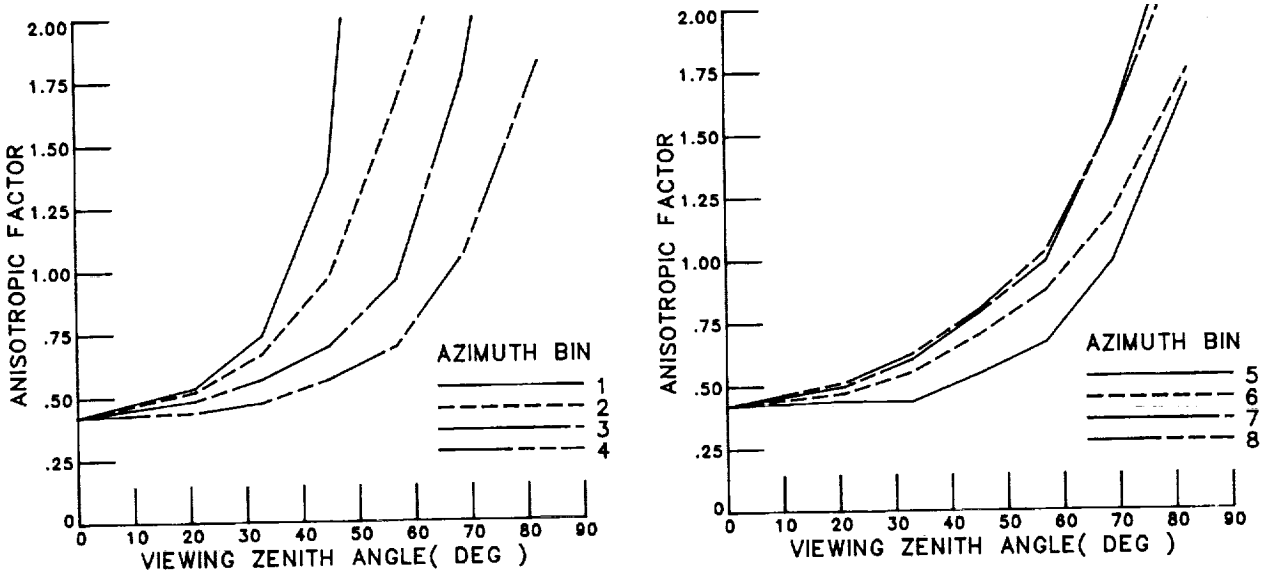
Figure 7. Continued.

SCENE TYPE : CLEAR OCEAN
DATA 1 - SW ANISOTROPIC FACTOR
2 - STANDARD DEVIATION OF SW RADIANCES(W/M**2/SR)
3 - CORRELATION OF LW AND SW RADIANCES
( ) - DATA SOURCE

SUN ZENITH : 78.5 - 84.3
MEAN ALBEDO : .2680 (18)
NORMALIZED ALBEDO : 3.5263 (18)

RELATIVE AZIMUTH

BIN NO. / ANGLE(DEG.)		1 0-9	2 9-30	3 30-60	4 60-90	5 90-120	6 120-150	7 150-171	8 171-180
VIEWING ZENITH BIN NO.	ANGLE(DEG.)								
1	0-15	.42 (12)	.42 (12)	.42 (12)	.42 (12)	.42 (12)	.42 (12)	.42 (12)	.42 (12)
		1.6 (13)	1.6 (13)	1.6 (13)	1.6 (13)	1.6 (13)	1.6 (13)	1.6 (13)	1.6 (13)
		.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)
2	15-27	.53 (12)	.52 (12)	.48 (12)	.44 (12)	.44 (12)	.47 (12)	.50 (12)	.51 (12)
		2.2 (13)	1.9 (13)	1.6 (13)	1.4 (13)	1.5 (13)	1.4 (13)	1.5 (13)	1.5 (13)
		.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)
3	27-39	.74 (12)	.67 (12)	.57 (12)	.46 (12)	.44 (12)	.55 (12)	.60 (12)	.62 (12)
		3.1 (13)	3.1 (13)	2.1 (13)	1.1 (13)	1.3 (13)	2.2 (13)	2.2 (13)	1.7 (13)
		.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)
4	39-51	1.39 (12)	.97 (12)	.70 (12)	.57 (12)	.54 (12)	.70 (12)	.78 (12)	.80 (12)
		5.1 (13)	5.8 (13)	3.2 (13)	1.6 (13)	.9 (13)	4.0 (13)	2.5 (13)	2.1 (13)
		.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)
5	51-63	4.05 (12)	1.65 (12)	.96 (12)	.69 (12)	.67 (12)	.87 (12)	.99 (12)	1.03 (12)
		22.0 (13)	8.5 (13)	4.7 (13)	2.3 (13)	1.5 (13)	2.2 (13)	2.9 (13)	2.9 (13)
		.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)
6	63-75	6.46 (12)	2.40 (12)	1.76 (12)	1.06 (12)	.95 (12)	1.18 (12)	1.54 (12)	1.53 (12)
		47.9 (13)	20.3 (13)	11.1 (13)	11.8 (13)	3.6 (13)	3.4 (13)	4.8 (13)	5.3 (13)
		.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)
7	75-90	12.76 (12)	3.16 (12)	3.37 (12)	1.82 (12)	1.65 (12)	1.75 (12)	2.45 (12)	2.28 (12)
		44.5 (13)	21.2 (13)	22.2 (13)	10.2 (13)	1.8 (13)	7.8 (13)	12.9 (13)	7.2 (13)
		.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)



(i) Solar-zenith-angle bin 9, 78.46° to 84.26°.

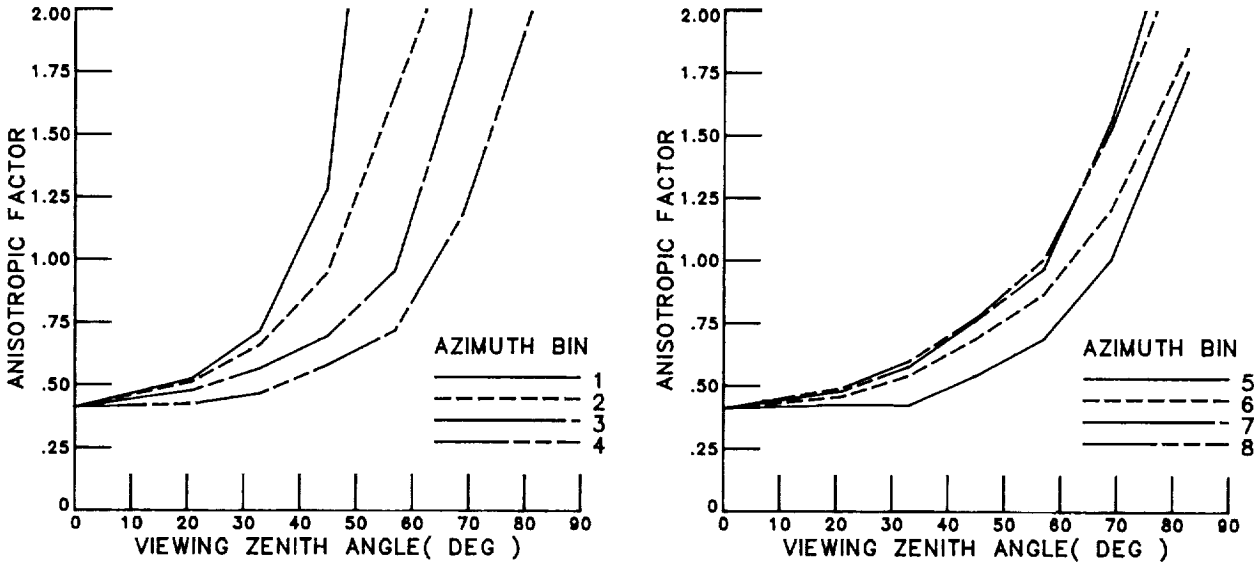
Figure 7. Continued.

SCENE TYPE : CLEAR OCEAN
DATA 1 - SW ANISOTROPIC FACTOR
2 - STANDARD DEVIATION OF SW RADIANCES(W/M**2/SR)
3 - CORRELATION OF LW AND SW RADIANCES
( ) - DATA SOURCE

SUN ZENITH : 84.3 - 90.0
MEAN ALBEDO : .3340 (18)
NORMALIZED ALBEDO : 4.3547 (18)

RELATIVE AZIMUTH

VIEWING ZENITH BIN NO.	VIEWING ZENITH ANGLE(DEG.)	1 0-9	2 9-30	3 30-60	4 60-90	5 90-120	6 120-150	7 150-171	8 171-180
1	0-15	.41 (12)	.41 (12)	.41 (12)	.41 (12)	.41 (12)	.41 (12)	.41 (12)	.41 (12)
		.6 (13)	.6 (13)	.6 (13)	.6 (13)	.6 (13)	.6 (13)	.6 (13)	.6 (13)
		.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)
2	15-27	.52 (12)	.51 (12)	.48 (12)	.42 (12)	.42 (12)	.46 (12)	.48 (12)	.49 (12)
		.9 (13)	.8 (13)	.7 (13)	.6 (13)	.6 (13)	.6 (13)	.6 (13)	.6 (13)
		.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)
3	27-39	.72 (12)	.66 (12)	.56 (12)	.47 (12)	.42 (12)	.54 (12)	.58 (12)	.60 (12)
		1.2 (13)	1.3 (13)	.9 (13)	.4 (13)	.5 (13)	.9 (13)	.9 (13)	.7 (13)
		.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)
4	39-51	1.28 (12)	.95 (12)	.70 (12)	.58 (12)	.54 (12)	.69 (12)	.76 (12)	.77 (12)
		1.9 (13)	2.3 (13)	1.3 (13)	.7 (13)	.4 (13)	1.6 (13)	1.0 (13)	.8 (13)
		.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)
5	51-63	3.79 (12)	1.67 (12)	.96 (12)	.72 (12)	.69 (12)	.87 (12)	.97 (12)	1.01 (12)
		8.5 (13)	3.8 (13)	1.9 (13)	1.0 (13)	.8 (13)	.9 (13)	1.2 (13)	1.2 (13)
		.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)
6	63-75	7.96 (12)	2.39 (12)	1.82 (12)	1.18 (12)	1.01 (12)	1.21 (12)	1.57 (12)	1.53 (12)
		16.7 (13)	8.4 (13)	4.8 (13)	5.5 (13)	1.5 (13)	1.4 (13)	2.0 (13)	2.2 (13)
		.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)
7	75-90	12.39 (12)	3.14 (12)	3.61 (12)	2.08 (12)	1.76 (12)	1.85 (12)	2.56 (12)	2.33 (12)
		18.0 (13)	8.8 (13)	9.9 (13)	4.8 (13)	.8 (13)	3.4 (13)	5.6 (13)	3.0 (13)
		.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)



(j) Solar-zenith-angle bin 10, 84.26° to 90.00°.

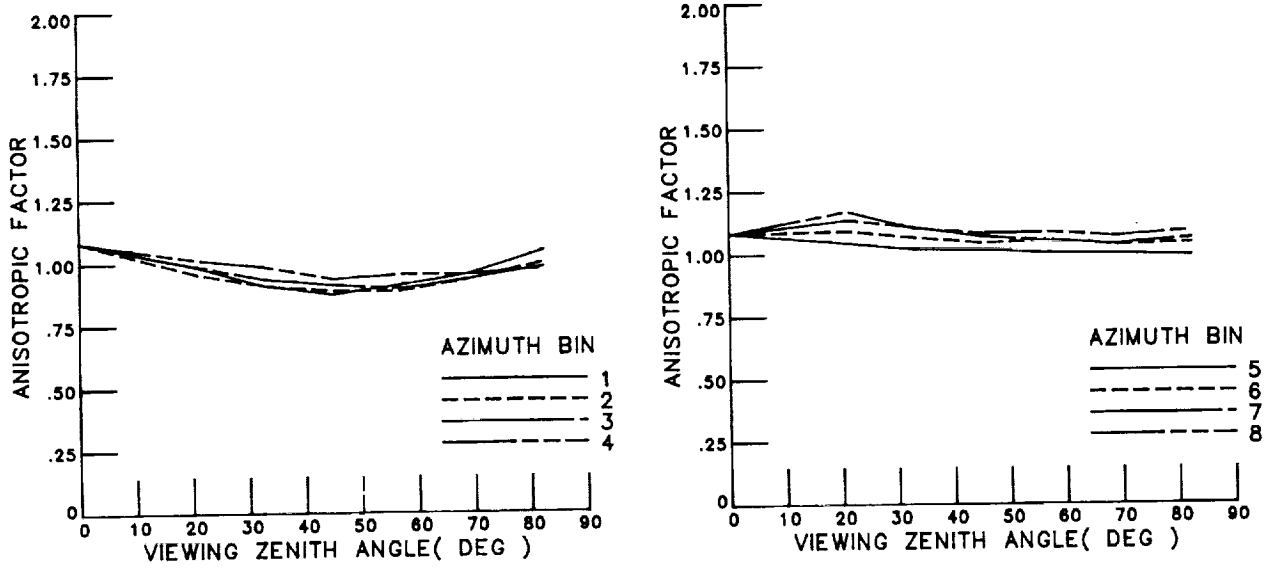
Figure 7. Concluded.

SCENE TYPE : CLEAR LAND
DATA 1 - SW ANISOTROPIC FACTOR
2 - STANDARD DEVIATION OF SW RADIANCES(W/M**2/SR)
3 - CORRELATION OF LW AND SW RADIANCES
( ) - DATA SOURCE

SUN ZENITH : .C - 25.8
MEAN ALBEDO : .1600 (18)
NORMALIZED ALBEDO : 1.0000 (18)

RELATIVE AZIMUTH

BIN NO.	VIEWING ZENITH ANGLE(DEG.)	1 0-9	2 9-30	3 30-60	4 60-90	5 90-120	6 120-150	7 150-171	8 171-180
1	0-15	1.06 (11)	1.08 (11)	1.08 (11)	1.08 (11)	1.08 (11)	1.08 (11)	1.08 (11)	1.08 (11)
		17.7 (11)	17.7 (11)	17.7 (11)	17.7 (11)	17.7 (11)	17.7 (11)	17.7 (11)	17.7 (11)
		.404 (11)	.404 (11)	.404 (11)	.404 (11)	.404 (11)	.404 (11)	.404 (11)	.404 (11)
2	15-27	.96 (10)	.96 (11)	.99 (11)	1.01 (11)	1.04 (11)	1.09 (11)	1.13 (11)	1.17 (11)
		17.2 (10)	15.0 (11)	17.2 (11)	17.2 (11)	17.1 (11)	16.2 (11)	15.8 (11)	16.5 (11)
		.335 (10)	.440 (11)	.394 (11)	.397 (11)	.378 (11)	.392 (11)	.370 (11)	.296 (11)
3	27-39	.91 (10)	.91 (11)	.94 (11)	.98 (11)	1.02 (11)	1.06 (11)	1.11 (11)	1.10 (10)
		16.2 (10)	15.3 (11)	17.1 (11)	17.0 (11)	17.0 (11)	15.2 (11)	16.2 (11)	14.8 (10)
		.363 (10)	.406 (11)	.386 (11)	.373 (11)	.343 (11)	.354 (11)	.279 (11)	.283 (10)
4	39-51	.87 (10)	.89 (11)	.91 (11)	.94 (11)	1.01 (11)	1.04 (11)	1.07 (11)	1.08 (11)
		15.2 (10)	16.0 (11)	15.2 (11)	15.7 (11)	16.0 (11)	15.9 (11)	15.4 (11)	14.6 (11)
		.354 (10)	.364 (11)	.355 (11)	.327 (11)	.236 (11)	.268 (11)	.303 (11)	.312 (11)
5	51-63	.91 (10)	.89 (11)	.89 (11)	.95 (10)	1.00 (11)	1.05 (11)	1.05 (11)	1.08 (11)
		16.4 (10)	15.0 (11)	14.8 (11)	15.6 (10)	14.7 (11)	16.7 (11)	13.3 (11)	14.1 (11)
		.262 (10)	.236 (11)	.248 (11)	.254 (10)	.131 (11)	.210 (11)	.250 (11)	.240 (11)
6	63-75	.95 (10)	.93 (11)	.93 (11)	.95 (11)	1.00 (11)	1.03 (11)	1.03 (11)	1.07 (11)
		14.5 (10)	12.5 (11)	13.2 (11)	12.1 (11)	13.6 (11)	14.5 (11)	12.0 (11)	12.2 (11)
		-.040 (10)	.022 (11)	.074 (11)	.103 (11)	-.042 (11)	-.011 (11)	.191 (11)	.118 (11)
7	75-90	1.04 (10)	1.00 (10)	.98 (10)	.97 (10)	.95 (10)	1.04 (10)	1.06 (11)	1.09 (10)
		17.1 (10)	14.3 (10)	11.6 (10)	10.9 (10)	12.1 (10)	12.8 (10)	11.3 (11)	11.0 (10)
		-.001 (10)	-.304 (10)	-.100 (10)	-.181 (10)	-.315 (10)	-.133 (10)	.016 (11)	-.039 (10)



(a) Solar-zenith-angle bin 1, 0° to 25.84°.

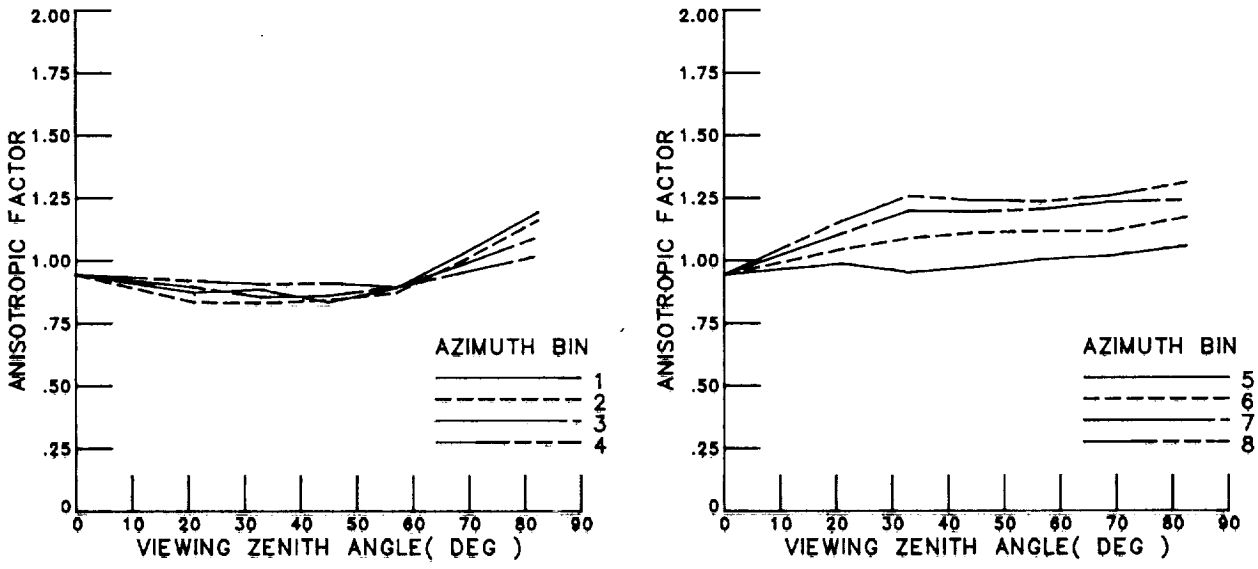
Figure 8. Bidirectional model for clear over land. (See table 5 for explanation of data sources.)

SCENE TYPE : CLEAR LAND
DATA 1 - SW ANISOTROPIC FACTOR
2 - STANDARD DEVIATION OF SW RADIANCES(W/M**2/SR)
3 - CORRELATION OF LW AND SW RADIANCES
( ) - DATA SOURCE

SUN ZENITH : 25.8 - 36.9
MEAN ALBEDO : .1565 (18)
NORMALIZED ALBEDO : .9781 (18)

RELATIVE AZIMUTH

BIN NO. / VIEWING ZENITH ANGLE(DEG.)	1 0-9	2 9-30	3 30-60	4 60-90	5 90-120	6 120-150	7 150-171	8 171-180
1 0-15	.94 (11)	.94 (11)	.94 (11)	.94 (11)	.94 (11)	.94 (11)	.94 (11)	.94 (11)
	14.3 (11)	14.3 (11)	14.3 (11)	14.3 (11)	14.3 (11)	14.3 (11)	14.3 (11)	14.3 (11)
	.402 (11)	.402 (11)	.402 (11)	.402 (11)	.402 (11)	.402 (11)	.402 (11)	.402 (11)
2 15-27	.87 (10)	.83 (11)	.89 (11)	.92 (11)	.95 (11)	1.04 (11)	1.11 (11)	1.16 (11)
	12.5 (10)	13.6 (11)	15.6 (11)	15.0 (11)	14.5 (11)	15.1 (11)	15.2 (11)	15.5 (11)
	.356 (10)	.430 (11)	.408 (11)	.400 (11)	.389 (11)	.400 (11)	.389 (11)	.384 (11)
3 27-39	.88 (10)	.83 (11)	.85 (11)	.90 (11)	.95 (11)	1.09 (11)	1.20 (11)	1.26 (10)
	10.2 (10)	13.4 (11)	14.3 (11)	14.1 (11)	13.7 (11)	16.3 (11)	16.5 (11)	14.3 (10)
	.184 (10)	.305 (11)	.401 (11)	.429 (11)	.349 (11)	.314 (11)	.324 (11)	.309 (10)
4 39-51	.83 (11)	.84 (11)	.86 (11)	.91 (11)	.97 (11)	1.11 (11)	1.20 (11)	1.24 (11)
	14.9 (11)	14.3 (11)	16.2 (11)	16.4 (11)	13.2 (11)	16.9 (11)	15.1 (11)	16.4 (11)
	.276 (11)	.306 (11)	.343 (11)	.348 (11)	.351 (11)	.307 (11)	.380 (11)	.292 (11)
5 51-63	.89 (10)	.87 (11)	.89 (11)	.89 (10)	1.00 (11)	1.12 (11)	1.21 (11)	1.24 (11)
	15.8 (10)	14.0 (11)	14.7 (11)	14.3 (10)	13.2 (11)	14.7 (11)	14.5 (11)	15.3 (11)
	.177 (10)	.206 (11)	.209 (11)	.277 (10)	.351 (11)	.320 (11)	.333 (11)	.335 (11)
6 63-75	1.03 (11)	1.00 (11)	.98 (11)	.95 (10)	1.02 (10)	1.12 (11)	1.23 (11)	1.26 (11)
	15.3 (11)	14.5 (11)	13.7 (11)	13.6 (10)	11.9 (10)	13.7 (11)	13.6 (11)	13.9 (11)
	-.162 (11)	-.016 (11)	.066 (11)	.052 (10)	.417 (10)	.286 (11)	.180 (11)	.139 (11)
7 75-90	1.20 (10)	1.16 (11)	1.10 (11)	1.02 (10)	1.06 (5)	1.17 (8)	1.24 (11)	1.31 (11)
	15.4 (10)	16.8 (11)	14.3 (11)	9.1 (10)	11.6 (5)	13.3 (8)	11.8 (11)	13.5 (11)
	-.271 (10)	-.209 (11)	-.223 (11)	.120 (10)	.307 (5)	.274 (8)	.061 (11)	.092 (11)



(b) Solar-zenith-angle bin 2, 25.84° to 36.87°.

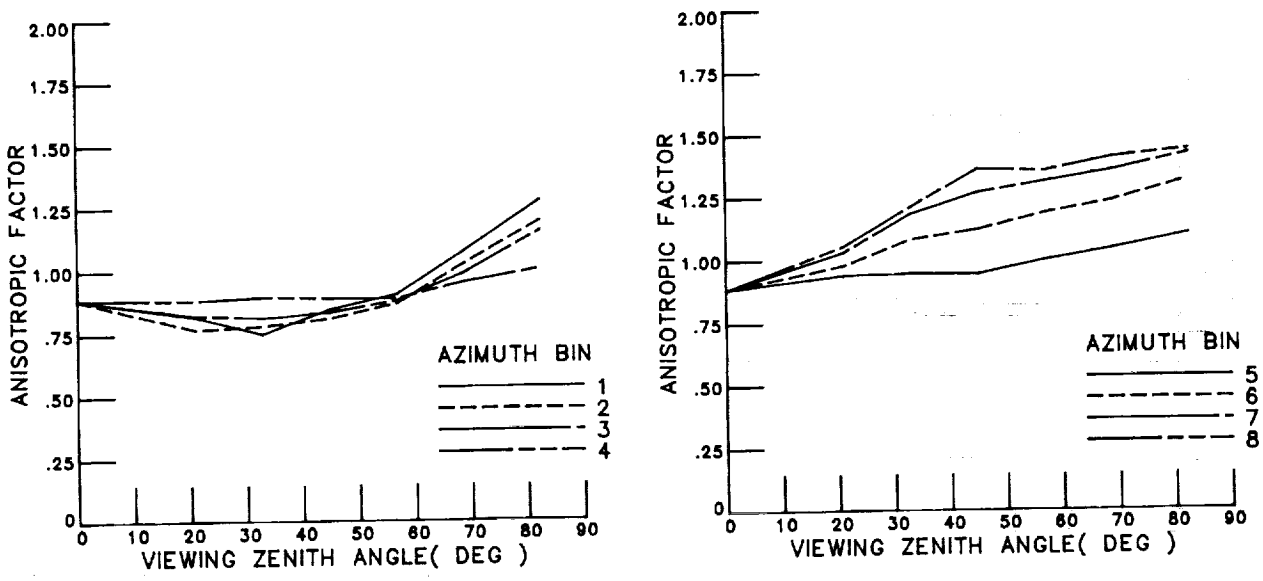
Figure 8. Continued.

SCENE TYPE : CLEAR LAND
DATA 1 - SW ANISOTROPIC FACTOR
2 - STANDARD DEVIATION OF SW RADIANCES(W/M**2/SR)
3 - CORRELATION OF LW AND SW RADIANCES
( ) - DATA SOURCE

SUN ZENITH : 36.9 - 45.6
MEAN ALBEDO : .1630 (18)
NORMALIZED ALBEDO : 1.0186 (18)

RELATIVE AZIMUTH

BIN NO. / ANGLE(DEG.)		1 0-9	2 9-30	3 30-60	4 60-90	5 90-120	6 120-150	7 150-171	8 171-180
VIEWING ZENITH BIN NO.	ANGLE(DEG.)								
1	0-15	.89 (11)	.89 (11)	.89 (11)	.89 (11)	.89 (11)	.89 (11)	.89 (11)	.89 (11)
		14.0 (11)	14.0 (11)	14.0 (11)	14.0 (11)	14.0 (11)	14.0 (11)	14.0 (11)	14.0 (11)
		.359 (11)	.359 (11)	.359 (11)	.359 (11)	.359 (11)	.359 (11)	.359 (11)	.359 (11)
2	15-27	.82 (10)	.77 (10)	.82 (11)	.86 (11)	.94 (11)	.98 (11)	1.03 (11)	1.06 (10)
		14.7 (10)	12.5 (10)	14.5 (11)	14.7 (11)	14.4 (11)	13.4 (11)	12.1 (11)	14.0 (10)
		.306 (10)	.359 (10)	.320 (11)	.323 (11)	.309 (11)	.366 (11)	.385 (11)	.374 (10)
3	27-39	.75 (10)	.78 (10)	.81 (10)	.90 (10)	.95 (10)	1.08 (11)	1.18 (10)	1.21 (10)
		10.2 (10)	12.3 (10)	12.5 (10)	16.3 (10)	14.7 (10)	14.4 (11)	14.3 (10)	14.3 (10)
		.268 (10)	.323 (10)	.360 (10)	.274 (10)	.335 (10)	.304 (11)	.296 (10)	.382 (10)
4	39-51	.85 (10)	.81 (11)	.84 (11)	.89 (11)	.94 (11)	1.12 (11)	1.27 (11)	1.36 (10)
		17.2 (10)	14.3 (11)	15.3 (11)	14.9 (11)	12.6 (11)	13.3 (11)	13.5 (11)	14.0 (10)
		.062 (10)	.285 (11)	.266 (11)	.235 (11)	.325 (11)	.235 (11)	.328 (11)	.335 (10)
5	51-63	.90 (10)	.87 (11)	.86 (10)	.89 (10)	1.00 (11)	1.19 (11)	1.31 (11)	1.35 (10)
		16.9 (10)	14.5 (11)	15.0 (10)	12.3 (10)	12.8 (11)	15.6 (11)	14.2 (11)	14.3 (10)
		.036 (10)	.100 (11)	.229 (10)	.244 (10)	.344 (11)	.230 (11)	.370 (11)	.248 (10)
6	63-75	1.07 (10)	1.02 (11)	.99 (11)	.95 (10)	1.04 (10)	1.23 (11)	1.36 (11)	1.41 (11)
		14.1 (10)	15.0 (11)	13.4 (11)	12.6 (10)	12.5 (10)	13.9 (11)	12.8 (11)	13.7 (11)
		-.175 (10)	-.060 (11)	.007 (11)	.143 (10)	.226 (10)	.071 (11)	.243 (11)	.219 (11)
7	75-90	1.27 (10)	1.19 (10)	1.15 (10)	1.00 (9)	1.10 (5)	1.32 (9)	1.42 (11)	1.44 (11)
		16.6 (10)	12.8 (10)	13.6 (10)	7.8 (9)	11.1 (5)	10.7 (9)	11.4 (11)	12.2 (11)
		-.336 (10)	-.230 (10)	-.122 (10)	.006 (9)	.156 (5)	.178 (9)	-.050 (11)	.154 (11)



(c) Solar-zenith-angle bin 3, 36.87° to 45.57°.

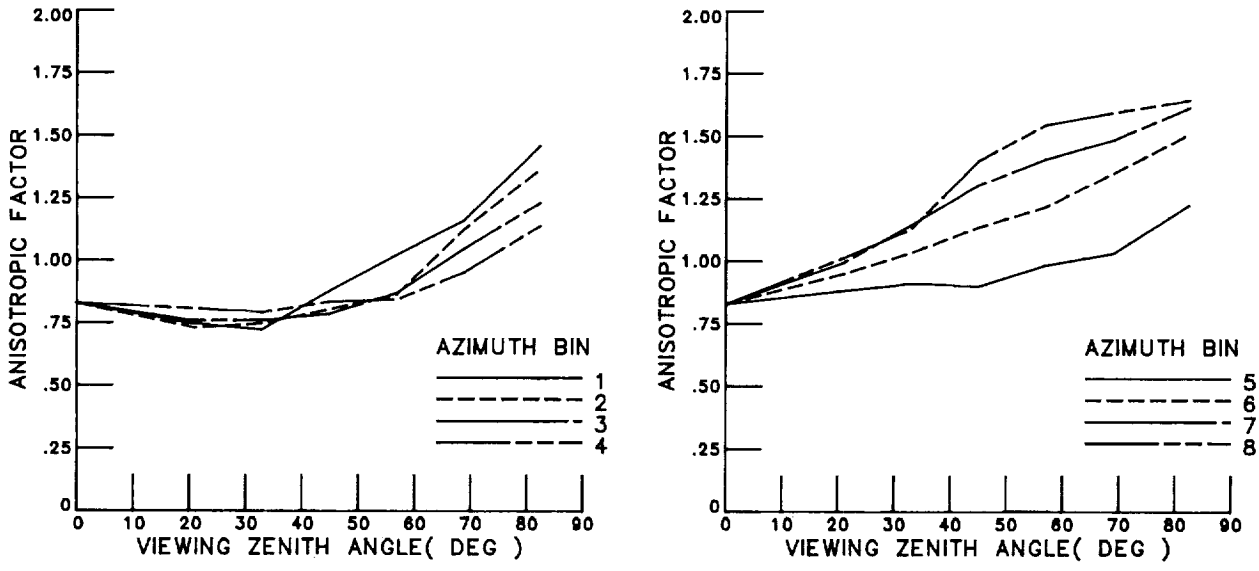
Figure 8. Continued.

SCENE TYPE : CLEAR LAND
DATA 1 - SW ANISOTROPIC FACTOR
2 - STANDARD DEVIATION OF SW RADIANCES(W/M**2/SR)
3 - CORRELATION OF LW AND SW RADIANCES
( ) - DATA SOURCE

SUN ZENITH : 45.6 - 53.1
MEAN ALBEDO : .1670 (18)
NORMALIZED ALBEDO : 1.0438 (18)

RELATIVE AZIMUTH

BIN NO. / ANGLE(DEG.)		1 0-9	2 9-30	3 30-60	4 60-90	5 90-120	6 120-150	7 150-171	8 171-180
VIEWING ZENITH BIN NO.	ANGLE(DEG.)								
1	0-15	.83 (11)	.83 (11)	.83 (11)	.83 (11)	.83 (11)	.83 (11)	.83 (11)	.83 (11)
		8.1 (11)	8.1 (11)	8.1 (11)	8.1 (11)	8.1 (11)	8.1 (11)	8.1 (11)	8.1 (11)
		.271 (11)	.271 (11)	.271 (11)	.271 (11)	.271 (11)	.271 (11)	.271 (11)	.271 (11)
2	15-27	.75 (10)	.73 (10)	.76 (11)	.81 (11)	.88 (11)	.95 (11)	.99 (10)	1.01 (10)
		7.6 (10)	6.9 (10)	7.0 (11)	7.5 (11)	8.4 (11)	9.2 (11)	9.3 (10)	9.1 (10)
		.261 (10)	.171 (10)	.313 (11)	.177 (11)	.165 (11)	.164 (11)	.234 (10)	.242 (10)
3	27-39	.72 (9)	.75 (10)	.76 (10)	.79 (10)	.91 (10)	1.03 (10)	1.15 (10)	1.13 (10)
		6.2 (9)	6.8 (10)	6.7 (10)	6.8 (10)	8.5 (10)	9.2 (10)	9.8 (10)	8.0 (10)
		.312 (9)	.176 (10)	.218 (10)	.312 (10)	.234 (10)	.175 (10)	.175 (10)	.305 (10)
4	39-51	.86 (10)	.81 (10)	.79 (10)	.84 (10)	.90 (10)	1.14 (10)	1.31 (10)	1.40 (10)
		11.9 (10)	7.8 (10)	7.5 (10)	6.7 (10)	7.3 (10)	8.7 (10)	10.0 (10)	10.8 (10)
		.063 (10)	.137 (10)	.220 (10)	.236 (10)	.370 (10)	.171 (10)	.206 (10)	.198 (10)
5	51-63	1.02 (10)	.87 (10)	.87 (10)	.85 (10)	.95 (10)	1.22 (10)	1.41 (10)	1.55 (10)
		31.6 (10)	7.2 (10)	8.7 (10)	7.1 (10)	7.5 (10)	8.8 (10)	11.0 (10)	11.7 (10)
		-.106 (10)	-.095 (10)	.032 (10)	.174 (10)	.314 (10)	-.026 (10)	.240 (10)	.187 (10)
6	63-75	1.16 (10)	1.13 (11)	1.05 (10)	.95 (10)	1.02 (10)	1.36 (10)	1.49 (11)	1.60 (10)
		11.3 (10)	12.1 (11)	8.8 (10)	6.6 (10)	7.6 (10)	9.3 (10)	10.8 (11)	10.6 (10)
		-.208 (10)	-.402 (11)	-.266 (10)	.078 (10)	.204 (10)	-.056 (10)	.128 (11)	.037 (10)
7	75-90	1.46 (9)	1.37 (10)	1.23 (10)	1.14 (6)	1.23 (5)	1.51 (9)	1.62 (10)	1.65 (10)
		15.1 (9)	13.2 (10)	10.2 (10)	8.2 (6)	8.6 (5)	9.3 (9)	10.8 (10)	9.4 (10)
		-.247 (9)	-.434 (10)	-.304 (10)	-.063 (6)	.045 (5)	-.007 (9)	-.122 (10)	-.193 (10)



(d) Solar-zenith-angle bin 4, 45.57° to 53.13°.

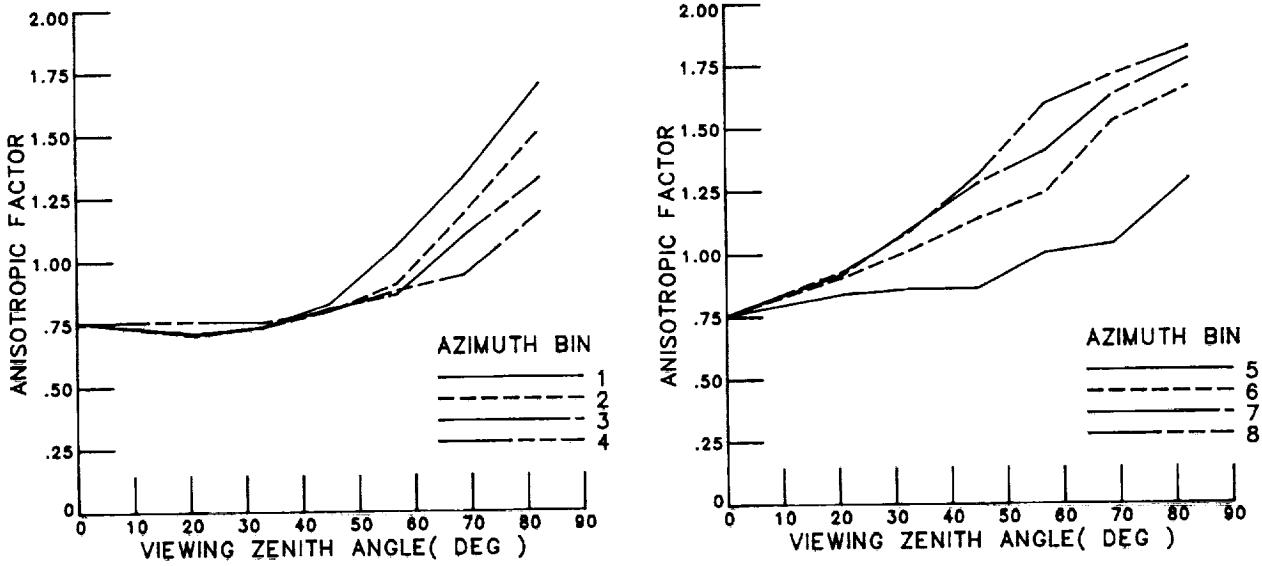
Figure 8. Continued.

SCENE TYPE : CLEAR LAND
DATA 1 - SW ANISOTROPIC FACTOR
2 - STANDARD DEVIATION OF SW RADIANCES(W/M**2/SR)
3 - CORRELATION OF LW AND SW RADIANCES
( ) - DATA SOURCE

SUN ZENITH : 53.1 - 60.0
MEAN ALBEDO : .1750 (18)
NORMALIZED ALBEDO : 1.0938 (18)

RELATIVE AZIMUTH

VIEWING ZENITH BIN NO.	VIEWING ZENITH ANGLE(DEG.)	BIN NO. 1 ANGLE(DEG.) 0-9	2 9-30	3 30-60	4 60-90	5 90-120	6 120-150	7 150-171	8 171-180
1	0-15	.76 (11)	.76 (11)	.76 (11)	.76 (11)	.76 (11)	.76 (11)	.76 (11)	.76 (11)
		7.6 (11)	7.6 (11)	7.6 (11)	7.6 (11)	7.6 (11)	7.6 (11)	7.6 (11)	7.6 (11)
		.134 (11)	.134 (11)	.134 (11)	.134 (11)	.134 (11)	.134 (11)	.134 (11)	.134 (11)
2	15-27	.71 (10)	.70 (10)	.71 (10)	.76 (10)	.84 (10)	.91 (10)	.92 (10)	.93 (10)
		6.9 (10)	5.8 (10)	6.9 (10)	8.0 (10)	9.6 (10)	8.5 (10)	8.5 (10)	8.5 (10)
		.213 (10)	.047 (10)	-.042 (10)	.024 (10)	.048 (10)	-.105 (10)	.168 (10)	.007 (10)
3	27-39	.74 (9)	.73 (10)	.73 (10)	.76 (10)	.86 (9)	1.02 (10)	1.10 (10)	1.09 (8)
		6.4 (9)	6.9 (10)	7.6 (10)	6.3 (10)	7.9 (9)	11.5 (10)	9.2 (10)	7.9 (8)
		-.191 (9)	.093 (10)	-.120 (10)	-.016 (10)	-.082 (9)	-.037 (10)	.193 (10)	-.189 (8)
4	39-51	.83 (10)	.80 (10)	.81 (10)	.80 (10)	.86 (10)	1.14 (10)	1.28 (10)	1.31 (10)
		8.7 (10)	7.5 (10)	7.8 (10)	7.4 (10)	5.9 (10)	9.6 (10)	10.5 (10)	9.9 (10)
		-.289 (10)	-.115 (10)	.101 (10)	.041 (10)	.082 (10)	-.103 (10)	.168 (10)	.074 (10)
5	51-63	1.06 (9)	.91 (10)	.87 (10)	.88 (10)	1.00 (10)	1.24 (10)	1.41 (10)	1.60 (9)
		10.2 (9)	7.5 (10)	7.1 (10)	7.3 (10)	9.2 (10)	11.8 (10)	10.4 (10)	11.5 (9)
		-.076 (9)	-.193 (10)	-.132 (10)	-.196 (10)	.112 (10)	-.168 (10)	-.031 (10)	.012 (9)
6	63-75	1.33 (10)	1.19 (10)	1.10 (10)	.94 (9)	1.04 (10)	1.53 (10)	1.63 (10)	1.71 (10)
		17.2 (10)	11.3 (10)	10.0 (10)	6.6 (9)	9.1 (10)	11.6 (10)	13.0 (10)	11.1 (10)
		-.438 (10)	-.395 (10)	-.343 (10)	-.020 (9)	.162 (10)	-.114 (10)	-.116 (10)	.006 (10)
7	75-90	1.76 (9)	1.52 (9)	1.32 (10)	1.19 (5)	1.25 (5)	1.66 (8)	1.77 (10)	1.82 (10)
		20.1 (9)	14.6 (9)	10.6 (10)	6.1 (5)	8.9 (5)	7.8 (8)	12.5 (10)	11.3 (10)
		-.555 (9)	-.376 (9)	-.418 (10)	-.204 (5)	-.097 (5)	-.326 (8)	-.062 (10)	.127 (10)



(e) Solar-zenith-angle bin 5, 53.13° to 60.00°.

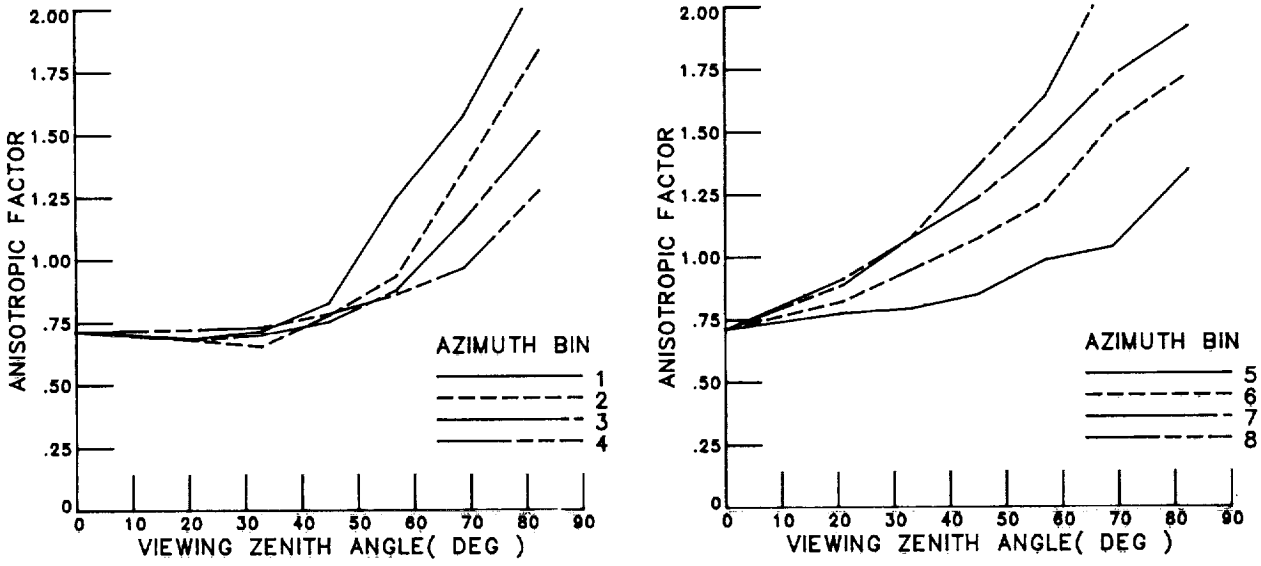
Figure 8. Continued.

SCENE TYPE : CLEAR LAND
DATA 1 - SW ANISOTROPIC FACTOR
2 - STANDARD DEVIATION OF SW RADIANCES(W/M**2/SR)
3 - CORRELATION OF LW AND SW RADIANCES
( ) - DATA SOURCE

SUN ZENITH : 60.0 - 66.4
MEAN ALBEDO : .1663 (18)
NORMALIZED ALBEDO : 1.1644 (18)

RELATIVE AZIMUTH

VIEWING ZENITH BIN NO.	VIEWING ZENITH ANGLE(DEG.)	BIN NO. / ANGLE(DEG.) 1 0-9	2 9-30	3 30-60	4 60-90	5 90-120	6 120-150	7 150-171	8 171-180
1	0-15	.71 (10)	.71 (10)	.71 (10)	.71 (10)	.71 (10)	.71 (10)	.71 (10)	.71 (10)
		5.9 (10)	5.9 (10)	5.9 (10)	5.9 (10)	5.9 (10)	5.9 (10)	5.9 (10)	5.9 (10)
		.304 (10)	.304 (10)	.304 (10)	.304 (10)	.304 (10)	.304 (10)	.304 (10)	.304 (10)
2	15-27	.69 (8)	.66 (8)	.66 (9)	.72 (9)	.78 (9)	.82 (9)	.91 (9)	.89 (8)
		5.6 (8)	4.7 (8)	5.1 (9)	5.2 (9)	6.9 (9)	5.8 (9)	7.7 (9)	6.6 (8)
		.217 (8)	.196 (8)	-.056 (9)	-.058 (9)	-.070 (9)	.110 (9)	.279 (9)	.103 (8)
3	27-39	.71 (7)	.65 (8)	.70 (9)	.73 (9)	.79 (8)	.95 (9)	1.07 (8)	1.07 (7)
		3.9 (7)	4.8 (8)	4.6 (9)	4.0 (9)	4.0 (8)	6.3 (9)	8.0 (8)	6.5 (7)
		.151 (7)	.296 (8)	-.009 (9)	-.243 (9)	.104 (8)	.197 (9)	.319 (8)	-.607 (7)
4	39-51	.83 (8)	.76 (9)	.75 (9)	.78 (9)	.85 (9)	1.07 (9)	1.23 (9)	1.36 (9)
		5.9 (8)	5.9 (9)	4.4 (9)	3.9 (9)	5.2 (9)	7.7 (9)	8.0 (9)	12.0 (9)
		.017 (8)	-.210 (9)	-.012 (9)	-.037 (9)	.069 (9)	.137 (9)	.065 (9)	-.363 (9)
5	51-63	1.24 (8)	.93 (8)	.88 (8)	.86 (9)	.95 (9)	1.22 (8)	1.45 (9)	1.64 (8)
		23.9 (8)	5.6 (8)	4.2 (8)	4.9 (9)	6.8 (9)	5.7 (8)	8.4 (9)	11.3 (8)
		.124 (8)	-.079 (8)	-.096 (8)	.017 (9)	-.132 (9)	.082 (8)	.218 (9)	-.031 (8)
6	63-75	1.57 (8)	1.35 (10)	1.16 (9)	.97 (9)	1.04 (8)	1.53 (9)	1.72 (10)	2.14 (9)
		16.6 (8)	11.6 (10)	10.1 (9)	4.5 (9)	6.8 (8)	8.4 (9)	10.0 (10)	13.6 (9)
		-.271 (8)	-.239 (10)	-.410 (9)	-.282 (9)	.214 (8)	.025 (9)	.018 (10)	.048 (9)
7	75-90	2.12 (8)	1.83 (9)	1.51 (8)	1.28 (5)	1.35 (5)	1.73 (7)	1.92 (9)	2.16 (8)
		27.6 (8)	16.2 (9)	6.5 (8)	5.8 (5)	7.2 (5)	8.4 (7)	9.7 (9)	10.0 (8)
		-.142 (8)	-.346 (9)	-.173 (8)	-.135 (5)	.205 (5)	.379 (7)	-.327 (9)	.263 (8)



(f) Solar-zenith-angle bin 6, 60.00° to 66.42°.

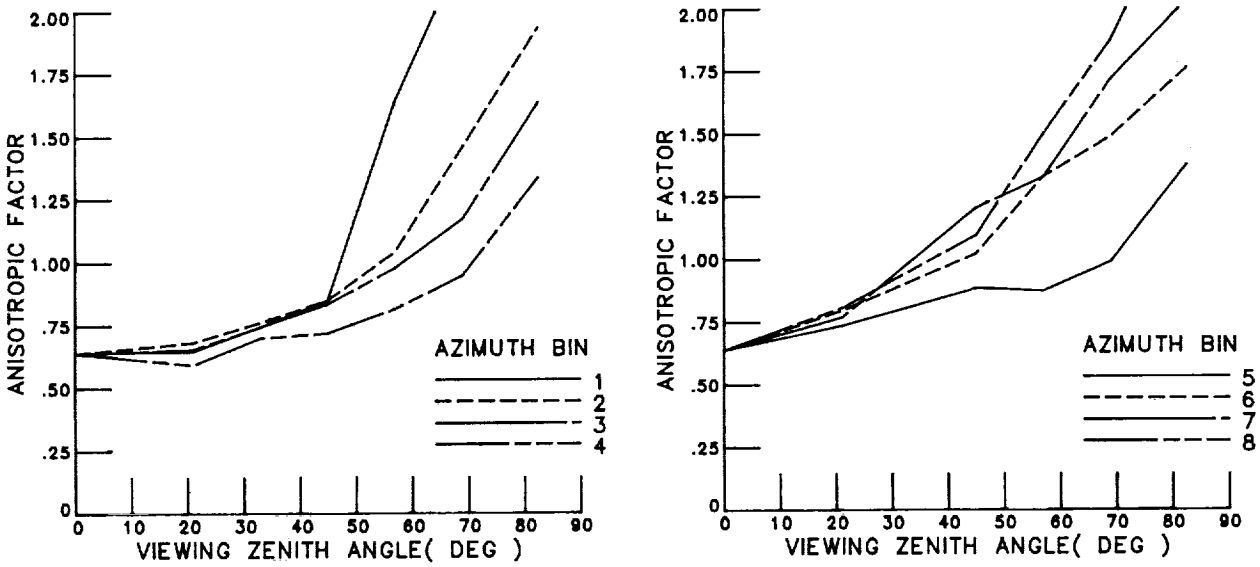
Figure 8. Continued.

SCENE TYPE : CLEAR LAND
DATA 1 - SW ANISOTROPIC FACTOR
2 - STANDARD DEVIATION OF SW RADIANCES(W/M**2/SR)
3 - CORRELATION OF LW AND SW RADIANCES
( ) - DATA SOURCE

SUN ZENITH : 66.4 - 72.5
MEAN ALBEDO : .2C50 (18)
NORMALIZED ALBEDO : 1.2E13 (18)

RELATIVE AZIMUTH

BIN NO. / ANGLE(DEG.)		1 0-9	2 9-30	3 30-60	4 60-90	5 90-120	6 120-150	7 150-171	8 171-180
VIEWING ZENITH BIN NO.	ANGLE(DEG.)								
1	0-15	.64 (8)	.64 (8)	.64 (8)	.64 (8)	.64 (8)	.64 (8)	.64 (8)	.64 (8)
		3.7 (8)	3.7 (8)	3.7 (8)	3.7 (8)	3.7 (8)	3.7 (8)	3.7 (8)	3.7 (8)
		-.148 (8)	-.148 (8)	-.146 (8)	-.146 (8)	-.14E (8)	-.148 (8)	-.148 (8)	-.148 (8)
2	15-27	.65 (6)	.68 (6)	.65 (7)	.59 (7)	.74 (7)	.80 (7)	.77 (7)	.81 (7)
		5.9 (6)	6.0 (6)	8.1 (7)	3.5 (7)	4.5 (7)	4.1 (7)	3.6 (7)	5.2 (7)
		-.206 (6)	-.222 (6)	-.267 (7)	-.069 (7)	.12E (7)	-.066 (7)	-.226 (7)	.016 (7)
3	27-39	.74 (6)	.76 (6)	.74 (7)	.70 (6)	.81 (6)	.91 (6)	.99 (6)	.95 (6)
		4.0 (6)	4.1 (6)	4.0 (7)	3.6 (6)	4.4 (6)	5.3 (6)	4.7 (6)	4.7 (6)
		.095 (6)	-.055 (6)	.095 (7)	-.043 (6)	.20E (6)	-.184 (6)	.031 (6)	-.331 (6)
4	39-51	.65 (5)	.85 (8)	.84 (6)	.72 (8)	.85 (7)	1.02 (7)	1.20 (7)	1.10 (7)
		4.5 (5)	4.5 (8)	4.5 (6)	2.7 (8)	4.4 (7)	6.4 (7)	5.9 (7)	4.3 (7)
		-.233 (5)	-.233 (8)	-.172 (6)	-.291 (8)	.28S (7)	-.301 (7)	.289 (7)	-.678 (7)
5	51-63	1.04 (5)	1.04 (7)	.98 (5)	.82 (7)	.87 (7)	1.33 (7)	1.33 (7)	1.50 (15)
		13.1 (5)	6.0 (7)	5.5 (5)	2.6 (7)	2.E (7)	8.7 (7)	6.3 (7)	5.3 (6)
		-.435 (5)	-.230 (7)	-.204 (5)	-.067 (7)	-.16E (7)	-.394 (7)	.409 (7)	-.135 (6)
6	63-75	2.24 (7)	1.46 (7)	1.17 (7)	.95 (6)	.95 (7)	1.49 (7)	1.72 (8)	1.87 (15)
		20.2 (7)	9.9 (7)	8.0 (7)	5.0 (6)	6.E (7)	4.8 (7)	7.4 (8)	7.4 (6)
		-.641 (7)	-.302 (7)	-.436 (7)	-.252 (6)	-.435 (7)	.089 (7)	-.009 (8)	-.009 (6)
7	75-90	3.23 (15)	1.93 (15)	1.64 (15)	1.34 (15)	1.3E (15)	1.76 (6)	2.03 (8)	2.50 (15)
		20.2 (5)	9.9 (6)	8.0 (5)	5.0 (15)	6.E (5)	7.2 (6)	9.5 (8)	9.5 (6)
		-.641 (5)	-.302 (6)	-.436 (5)	-.252 (15)	-.435 (5)	-.202 (6)	-.493 (8)	-.493 (6)



(g) Solar-zenith-angle bin 7, 66.42° to 72.54°.

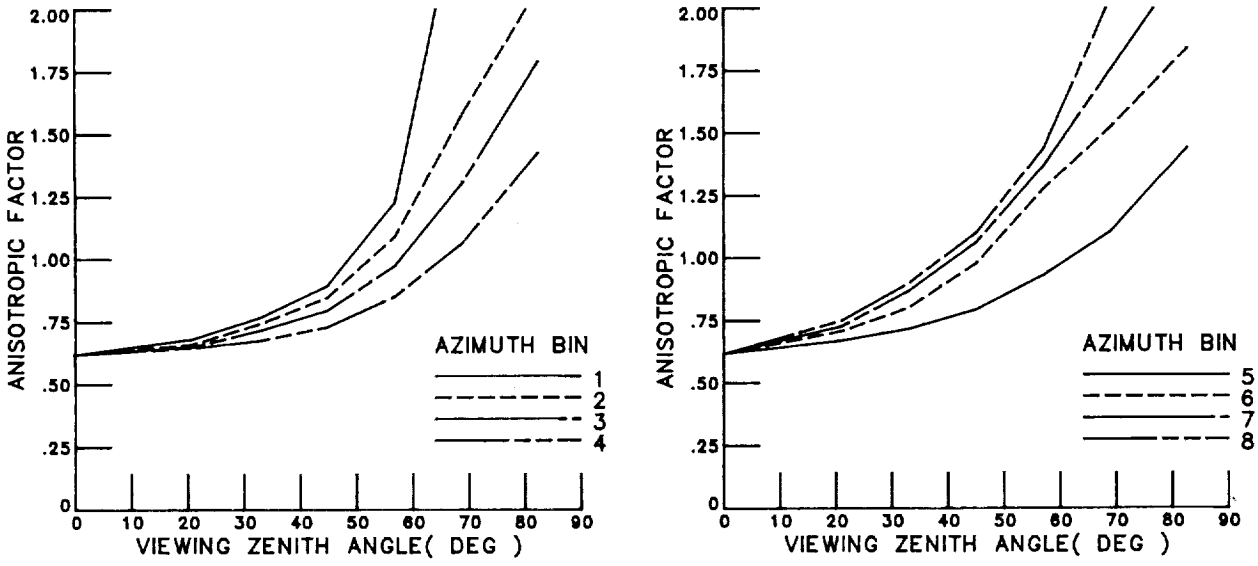
Figure 8. Continued.

SCENE TYPE : CLEAR LAND
DATA 1 - SW ANISOTROPIC FACTOR
2 - STANDARD DEVIATION OF SW RADIANCES(W/M**2/SR)
3 - CORRELATION OF LW AND SW RADIANCES
( ) - DATA SOURCE

SUN ZENITH : 72.5 - 78.5
MEAN ALBEDO : .2310 (18)
NORMALIZED ALBEDO : 1.4438 (18)

RELATIVE AZIMUTH

BIN NO. / ANGLE(DEG.)		1 0-9	2 9-30	3 30-60	4 60-90	5 90-120	6 120-150	7 150-171	8 171-180
VIEWING ZENITH BIN NO.	ANGLE(DEG.)								
1	0-15	.62 (12)	.62 (12)	.62 (12)	.62 (12)	.62 (12)	.62 (12)	.62 (12)	.62 (12)
		2.9 (13)	2.9 (13)	2.9 (13)	2.9 (13)	2.9 (13)	2.9 (13)	2.9 (13)	2.9 (13)
		.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)
2	15-27	.66 (12)	.66 (12)	.65 (12)	.65 (12)	.67 (12)	.71 (12)	.73 (12)	.75 (12)
		5.0 (13)	4.7 (13)	6.5 (13)	3.1 (13)	3.3 (13)	2.9 (13)	2.8 (13)	3.9 (13)
		.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)
3	27-39	.77 (12)	.74 (12)	.72 (12)	.68 (12)	.72 (12)	.80 (12)	.87 (12)	.90 (12)
		3.3 (13)	3.2 (13)	3.1 (13)	2.8 (13)	3.2 (13)	3.7 (13)	3.4 (13)	3.6 (13)
		.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)
4	39-51	.89 (12)	.85 (12)	.80 (12)	.73 (12)	.79 (12)	.98 (12)	1.06 (12)	1.10 (12)
		3.8 (13)	3.6 (13)	3.4 (13)	2.2 (13)	3.2 (13)	4.9 (13)	4.2 (13)	3.5 (13)
		.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)
5	51-63	1.23 (12)	1.09 (12)	.97 (12)	.85 (12)	.93 (12)	1.28 (12)	1.37 (12)	1.44 (12)
		7.9 (13)	5.0 (13)	4.4 (13)	2.2 (13)	2.4 (13)	6.7 (13)	5.3 (13)	4.1 (13)
		.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)
6	63-75	2.50 (12)	1.58 (12)	1.31 (12)	1.06 (12)	1.11 (12)	1.53 (12)	1.76 (12)	2.04 (12)
		18.2 (13)	8.7 (13)	7.2 (13)	4.5 (13)	5.9 (13)	4.0 (13)	6.1 (13)	6.5 (13)
		.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)
7	75-90	4.29 (12)	2.08 (12)	1.79 (12)	1.43 (12)	1.44 (12)	1.84 (12)	2.19 (12)	2.86 (12)
		21.6 (13)	8.6 (13)	7.1 (13)	4.3 (13)	5.5 (13)	6.0 (13)	8.3 (13)	8.8 (13)
		.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)



(h) Solar-zenith-angle bin 8, 72.54° to 78.46°.

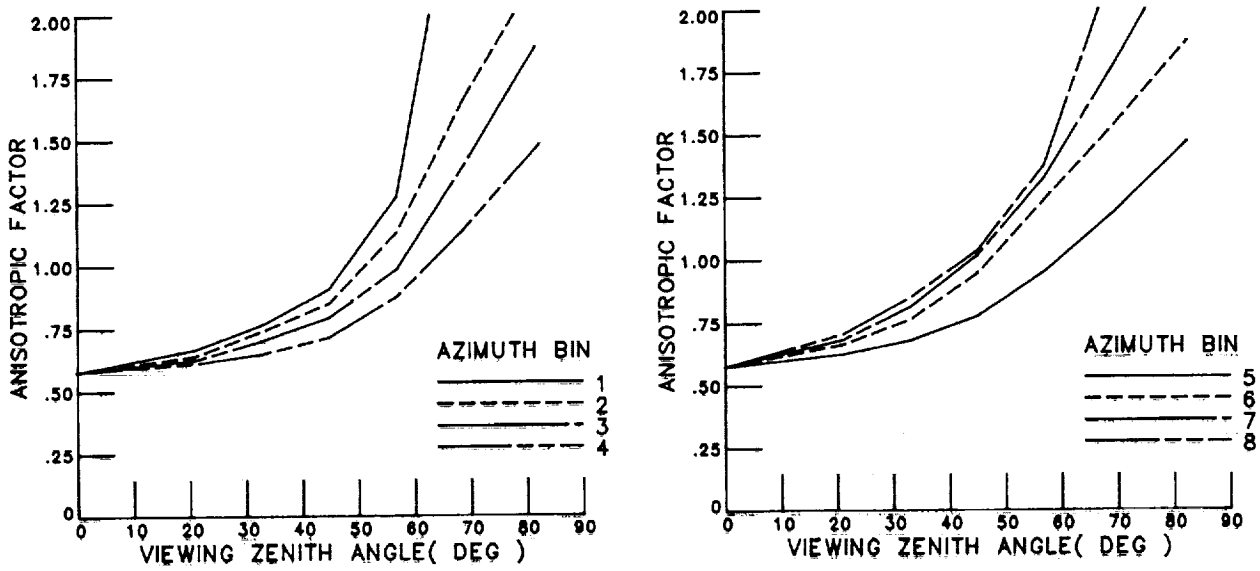
Figure 8. Continued.

SCENE TYPE : CLEAR LAND
DATA 1 - SW ANISOTROPIC FACTOR
2 - STANDARD DEVIATION OF SW RADIANCES(W/M**2/SR)
3 - CORRELATION OF LW AND SW RADIANCES
( ) - DATA SOURCE

SUN ZENITH : 78.5 - 84.3
MEAN ALBEDO : .2700 (18)
NORMALIZED ALBEDO : 1.6675 (18)

RELATIVE AZIMUTH

BIN NO. / ANGLE(DEG.)		1 0-9	2 9-30	3 30-60	4 60-90	5 90-120	6 120-150	7 150-171	8 171-180
VIEWING ZENITH BIN NO.	ANGLE(DEG.)								
1	0-15	.58 (12) 1.9 (13) .000 (0)	.58 (12) 1.9 (13) .000 (0)	.58 (12) 1.9 (13) .000 (0)	.58 (12) 1.9 (13) .000 (0)	.58 (12) 1.9 (13) .000 (0)	.58 (12) 1.9 (13) .000 (0)	.58 (12) 1.9 (13) .000 (0)	.58 (12) 1.9 (13) .000 (0)
2	15-27	.67 (12) 3.3 (13) .000 (0)	.64 (12) 3.3 (13) .000 (0)	.62 (12) 4.5 (13) .000 (0)	.61 (12) 2.1 (13) .000 (0)	.63 (12) 2.2 (13) .000 (0)	.67 (12) 2.0 (13) .000 (0)	.68 (12) 1.9 (13) .000 (0)	.71 (12) 2.6 (13) .000 (0)
3	27-39	.76 (12) 2.4 (13) .000 (0)	.74 (12) 2.3 (13) .000 (0)	.70 (12) 2.2 (13) .000 (0)	.65 (12) 1.9 (13) .000 (0)	.66 (12) 2.1 (13) .000 (0)	.76 (12) 2.6 (13) .000 (0)	.81 (12) 2.3 (13) .000 (0)	.85 (12) 2.4 (13) .000 (0)
4	39-51	.91 (12) 2.6 (13) .000 (0)	.85 (12) 2.6 (13) .000 (0)	.79 (12) 2.5 (13) .000 (0)	.71 (12) 1.6 (13) .000 (0)	.76 (12) 2.2 (13) .000 (0)	.95 (12) 3.4 (13) .000 (0)	1.02 (12) 2.9 (13) .000 (0)	1.04 (12) 2.3 (13) .000 (0)
5	51-63	1.27 (12) 5.9 (13) .000 (0)	1.13 (12) 3.7 (13) .000 (0)	.99 (12) 3.2 (13) .000 (0)	.88 (12) 1.6 (13) .000 (0)	.95 (12) 1.8 (13) .000 (0)	1.24 (12) 4.7 (13) .000 (0)	1.33 (12) 3.7 (13) .000 (0)	1.38 (12) 2.8 (13) .000 (0)
6	63-75	2.71 (12) 14.1 (13) .000 (0)	1.66 (12) 6.5 (13) .000 (0)	1.40 (12) 5.5 (13) .000 (0)	1.14 (12) 3.4 (13) .000 (0)	1.18 (12) 4.5 (13) .000 (0)	1.53 (12) 2.8 (13) .000 (0)	1.76 (12) 4.3 (13) .000 (0)	2.13 (12) 4.8 (13) .000 (0)
7	75-90	5.14 (12) 18.6 (13) .000 (0)	2.17 (12) 6.4 (13) .000 (0)	1.69 (12) 5.3 (13) .000 (0)	1.48 (12) 3.2 (13) .000 (0)	1.47 (12) 4.1 (13) .000 (0)	1.87 (12) 4.4 (13) .000 (0)	2.28 (12) 6.2 (13) .000 (0)	3.13 (12) 6.9 (13) .000 (0)



(i) Solar-zenith-angle bin 9, 78.46° to 84.26°.

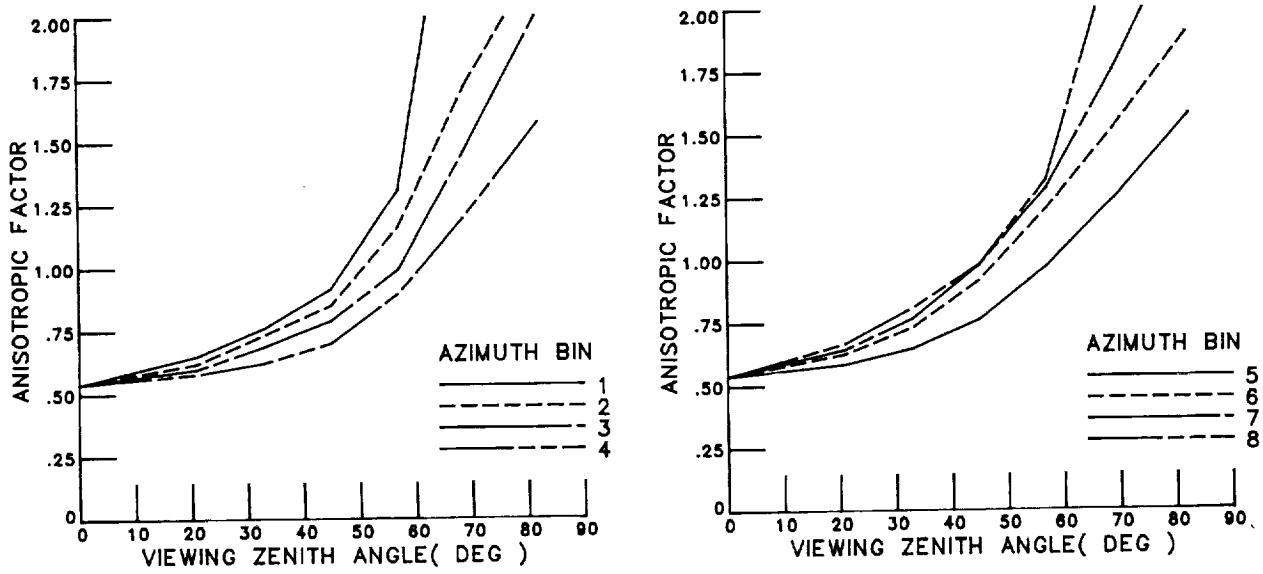
Figure 8. Continued.

SCENE TYPE : CLEAR LAND
DATA 1 - SW ANISOTROPIC FACTOR
2 - STANDARD DEVIATION OF SW RADIANCES(W/M**2/SR)
3 - CORRELATION OF LW AND SW RADIANCES
( ) - DATA SOURCE

SUN ZENITH : 84.3 - 90.0
MEAN ALBEDO : .3260 (18)
NORMALIZED ALBEDO : 2.0375 (18)

RELATIVE AZIMUTH

VIEWING ZENITH BIN NO.	ANGLE(DEG.)	1 0-9	2 9-30	3 30-60	4 60-90	5 90-120	6 120-150	7 150-171	8 171-180
1	0-15	.54 (12) .7 (13) .000 (0)	.54 (12) .7 (13) .000 (0)	.54 (12) .7 (13) .000 (0)	.54 (12) .7 (13) .000 (0)	.54 (12) .7 (13) .000 (0)	.54 (12) .7 (13) .000 (0)	.54 (12) .7 (13) .000 (0)	.54 (12) .7 (13) .000 (0)
2	15-27	.60 (12) 1.3 (13) .000 (0)	.62 (12) 1.2 (13) .000 (0)	.60 (12) 1.7 (13) .000 (0)	.58 (12) .8 (13) .000 (0)	.59 (12) .8 (13) .000 (0)	.63 (12) .7 (13) .000 (0)	.64 (12) .7 (13) .000 (0)	.67 (12) 1.0 (13) .000 (0)
3	27-39	.76 (12) .9 (13) .000 (0)	.73 (12) .9 (13) .000 (0)	.69 (12) .8 (13) .000 (0)	.62 (12) .7 (13) .000 (0)	.65 (12) .8 (13) .000 (0)	.73 (12) .9 (13) .000 (0)	.77 (12) .8 (13) .000 (0)	.81 (12) .9 (13) .000 (0)
4	39-51	.92 (12) 1.1 (13) .000 (0)	.85 (12) 1.0 (13) .000 (0)	.79 (12) .9 (13) .000 (0)	.70 (12) .6 (13) .000 (0)	.76 (12) .8 (13) .000 (0)	.92 (12) 1.3 (13) .000 (0)	.98 (12) 1.1 (13) .000 (0)	.98 (12) .9 (13) .000 (0)
5	51-63	1.31 (12) 2.0 (13) .000 (0)	1.16 (12) 1.5 (13) .000 (0)	.99 (12) 1.2 (13) .000 (0)	.90 (12) .6 (13) .000 (0)	.97 (12) .7 (13) .000 (0)	1.20 (12) 1.7 (13) .000 (0)	1.28 (12) 1.4 (13) .000 (0)	1.32 (12) 1.0 (13) .000 (0)
6	63-75	2.88 (12) 5.8 (13) .000 (0)	1.72 (12) 2.8 (13) .000 (0)	1.47 (12) 2.2 (13) .000 (0)	1.21 (12) 1.4 (13) .000 (0)	1.24 (12) 1.8 (13) .000 (0)	1.52 (12) 1.1 (13) .000 (0)	1.76 (12) 1.7 (13) .000 (0)	2.21 (12) 1.9 (13) .000 (0)
7	75-90	5.63 (12) 7.9 (13) .000 (0)	2.23 (12) 2.6 (13) .000 (0)	2.03 (12) 2.2 (13) .000 (0)	1.59 (12) 1.3 (13) .000 (0)	1.58 (12) 1.7 (13) .000 (0)	1.91 (12) 1.7 (13) .000 (0)	2.36 (12) 2.5 (13) .000 (0)	3.58 (12) 3.1 (13) .000 (0)



(j) Solar-zenith-angle bin 10, 84.26° to 90.00°.

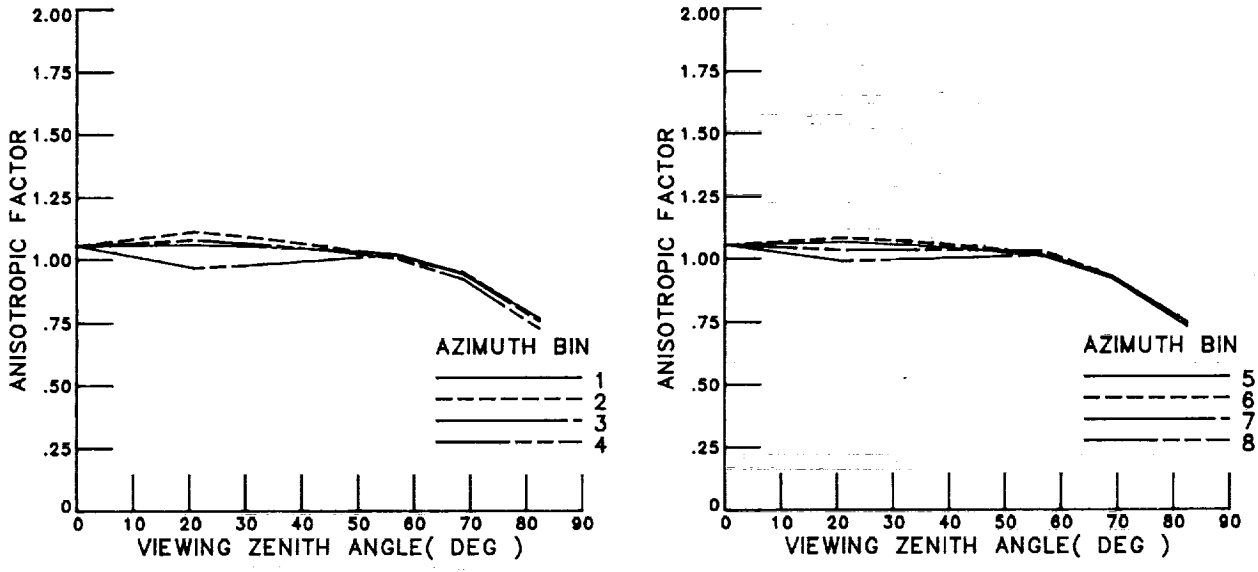
Figure 8. Concluded.

SCENE TYPE : CLEAR SNOW
DATA 1 - SW ANISOTROPIC FACTOR
2 - STANDARD DEVIATION OF SW RADIANCES(W/M**2/SR)
3 - CORRELATION OF LW AND SW RADIANCES
( ) - DATA SOURCE

SUN ZENITH : .C - 25.8
MEAN ALBEDO : .6673 (14)
NORMALIZED ALBEDO : 1.0C00 (14)

RELATIVE AZIMUTH

BIN NO. / ANGLE(DEG.)		1 0-9	2 9-30	3 30-60	4 60-90	5 90-120	6 120-150	7 150-171	8 171-180
VIEWING ZENITH BIN NO.	ANGLE(DEG.)								
1	0-15	1.06 (12)	1.06 (12)	1.06 (12)	1.06 (12)	1.06 (12)	1.06 (12)	1.06 (12)	1.06 (12)
		72.1 (13)	72.1 (13)	72.1 (13)	72.1 (13)	72.1 (13)	72.1 (13)	72.1 (13)	72.1 (13)
		.000 (0)	.000 (0)	.000 (0)	.000 (0)	.00C (0)	.000 (0)	.000 (0)	.000 (0)
2	15-27	1.06 (12)	1.11 (12)	.97 (12)	1.08 (12)	1.07 (12)	1.08 (12)	.99 (12)	1.03 (12)
		71.7 (13)	72.5 (13)	72.3 (13)	72.4 (13)	67.3 (13)	71.6 (13)	74.4 (13)	73.5 (13)
		.000 (0)	.000 (0)	.000 (0)	.000 (0)	.00C (0)	.000 (0)	.000 (0)	.000 (0)
3	27-39	1.05 (12)	1.09 (12)	.98 (12)	1.06 (12)	1.05 (12)	1.07 (12)	1.00 (12)	1.03 (12)
		65.0 (13)	76.9 (13)	62.5 (13)	65.4 (13)	72.1 (13)	57.5 (13)	64.0 (13)	69.4 (13)
		.000 (0)	.000 (0)	.000 (0)	.000 (0)	.00C (0)	.000 (0)	.000 (0)	.000 (0)
4	39-51	1.04 (12)	1.05 (12)	1.00 (12)	1.04 (12)	1.03 (12)	1.05 (12)	1.01 (12)	1.03 (12)
		63.5 (13)	64.1 (13)	57.9 (13)	69.3 (13)	68.2 (13)	67.6 (13)	69.8 (13)	63.2 (13)
		.000 (0)	.000 (0)	.000 (0)	.000 (0)	.00C (0)	.000 (0)	.000 (0)	.000 (0)
5	51-63	1.02 (12)	1.01 (12)	1.02 (12)	1.00 (12)	1.01 (12)	1.02 (12)	1.01 (12)	1.03 (12)
		62.5 (13)	62.5 (13)	63.8 (13)	71.0 (13)	68.3 (13)	64.8 (13)	53.9 (13)	61.4 (13)
		.000 (0)	.000 (0)	.000 (0)	.000 (0)	.00C (0)	.000 (0)	.000 (0)	.000 (0)
6	63-75	.95 (12)	.95 (12)	.94 (12)	.92 (12)	.92 (12)	.93 (12)	.93 (12)	.93 (12)
		56.2 (13)	64.1 (13)	51.2 (13)	61.6 (13)	60.C (13)	56.1 (13)	53.9 (13)	54.4 (13)
		.000 (0)	.000 (0)	.000 (0)	.000 (0)	.00C (0)	.000 (0)	.000 (0)	.000 (0)
7	75-90	.77 (12)	.77 (12)	.76 (12)	.73 (12)	.73 (12)	.74 (12)	.75 (12)	.75 (12)
		39.4 (13)	41.3 (13)	37.2 (13)	42.6 (13)	43.1 (13)	41.2 (13)	37.4 (13)	45.9 (13)
		.000 (0)	.000 (0)	.000 (0)	.000 (0)	.00C (0)	.000 (0)	.000 (0)	.000 (0)



(a) Solar-zenith-angle bin 1, 0° to 25.84°.

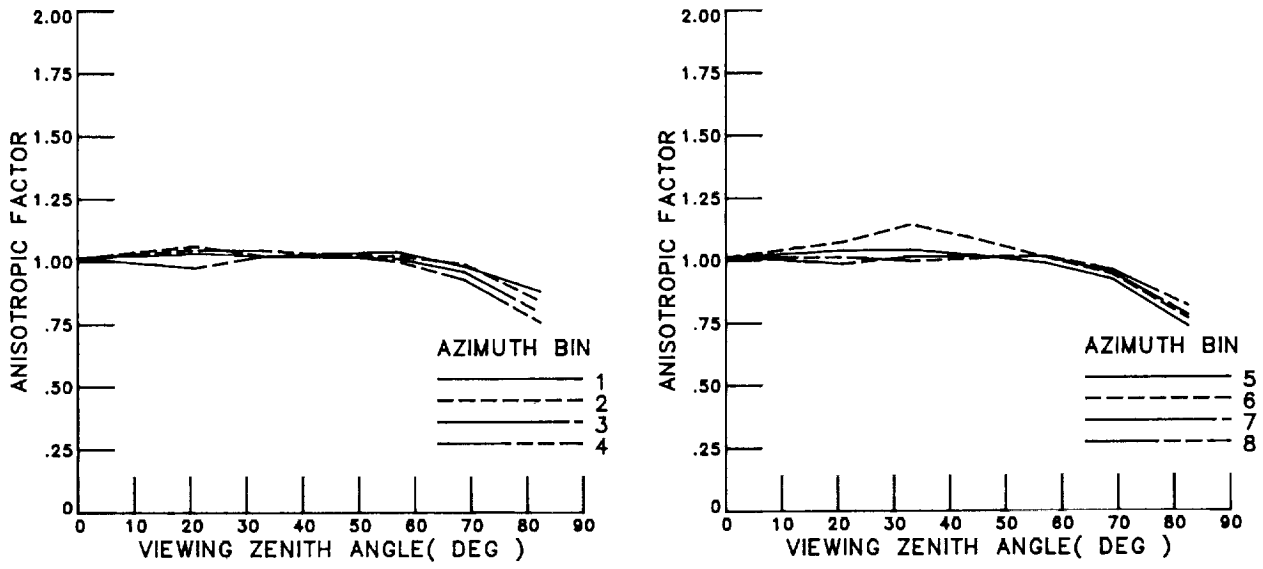
Figure 9. Bidirectional model for clear over snow. (See table 5 for explanation of data sources.)

SCENE TYPE : CLEAR SNOW
DATA 1 - SW ANISOTROPIC FACTOR
2 - STANDARD DEVIATION OF SW RADIANCES(W/M**2/SR)
3 - CORRELATION OF LW AND SW RADIANCES
( ) - DATA SOURCE

SUN ZENITH : 25.8 - 36.9
MEAN ALBEDO : .6703 (14)
NORMALIZED ALBEDO : 1.0045 (14)

RELATIVE AZIMUTH

VIEWING ZENITH BIN NO.	VIEWING ZENITH ANGLE(DEG.)	BIN NO. 1 ANGLE(DEG.) 0-9	2 9-30	3 30-60	4 60-90	5 90-120	6 120-150	7 150-171	8 171-180
1	0-15	1.01 (12)	1.01 (12)	1.01 (12)	1.01 (12)	1.01 (12)	1.01 (12)	1.01 (12)	1.01 (12)
		62.1 (13)	62.1 (13)	62.1 (13)	62.1 (13)	62.1 (13)	62.1 (13)	62.1 (13)	62.1 (13)
		.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)
2	15-27	1.03 (12)	1.06 (12)	.97 (12)	1.05 (12)	1.04 (12)	1.07 (12)	.99 (12)	1.01 (12)
		62.8 (13)	62.2 (13)	65.5 (13)	63.1 (13)	58.9 (13)	63.8 (13)	66.6 (13)	64.6 (13)
		.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)
3	27-39	1.02 (12)	1.02 (12)	1.02 (12)	1.04 (12)	1.04 (12)	1.14 (12)	1.01 (12)	1.00 (12)
		56.9 (13)	65.1 (13)	58.5 (13)	58.0 (13)	64.1 (13)	55.3 (13)	58.5 (13)	60.2 (13)
		.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)
4	39-51	1.03 (12)	1.02 (12)	1.02 (12)	1.03 (12)	1.02 (12)	1.08 (12)	1.02 (12)	1.01 (12)
		47.7 (13)	56.0 (13)	53.0 (13)	61.7 (13)	60.3 (13)	62.9 (13)	63.3 (13)	55.3 (13)
		.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)
5	51-63	1.04 (12)	1.02 (12)	1.01 (12)	1.00 (12)	.99 (12)	1.01 (12)	1.01 (12)	1.02 (12)
		57.1 (13)	57.0 (13)	56.9 (13)	63.7 (13)	60.2 (13)	57.9 (13)	48.5 (13)	54.6 (13)
		.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)
6	63-75	.98 (12)	.99 (12)	.96 (12)	.93 (12)	.92 (12)	.94 (12)	.95 (12)	.96 (12)
		52.3 (13)	60.1 (13)	46.8 (13)	55.7 (13)	54.0 (13)	51.3 (13)	49.5 (13)	50.5 (13)
		.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)
7	75-90	.86 (12)	.84 (12)	.80 (12)	.76 (12)	.74 (12)	.77 (12)	.78 (12)	.82 (12)
		40.6 (13)	40.7 (13)	35.2 (13)	40.0 (13)	39.0 (13)	38.3 (13)	35.3 (13)	45.1 (13)
		.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)



(b) Solar-zenith-angle bin 2, 25.84° to 36.87°.

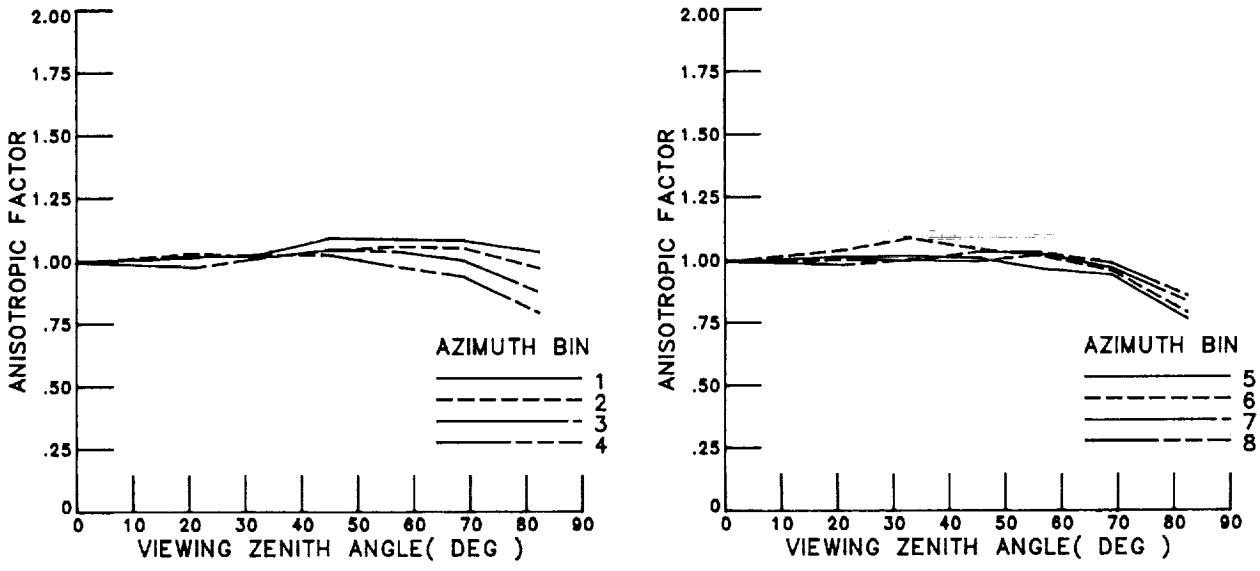
Figure 9. Continued.

SCENE TYPE : CLEAR SNOW
DATA 1 - SW ANISOTROPIC FACTOR
2 - STANDARD DEVIATION OF SW RADIANCES(W/M**2/SR)
3 - CORRELATION OF LW AND SW RADIANCES
( ) - DATA SOURCE

SUN ZENITH : 36.5 - 45.6
MEAN ALBEDO : .6733 (14)
NORMALIZED ALBEDO : 1.0090 (14)

RELATIVE AZIMUTH

BIN NO. / ANGLE(DEG.)		1 0-9	2 9-30	3 30-60	4 60-90	5 90-120	6 120-150	7 150-171	8 171-180
VIEWING ZENITH BIN NO.	ANGLE(DEG.)								
1	3-15	.99 (12) 54.1 (9) .000 (9)	.99 (12) 54.1 (9) .000 (9)	.99 (12) 54.1 (9) .000 (9)	.99 (12) 54.1 (9) .000 (9)	.99 (12) 54.1 (9) .000 (9)	.99 (12) 54.1 (9) .000 (9)	.99 (12) 54.1 (9) .000 (9)	.99 (12) 54.1 (9) .000 (9)
2	15-27	1.01 (12) 54.7 (7) .000 (7)	1.03 (12) 53.4 (8) .000 (8)	.97 (12) 58.0 (9) .000 (9)	1.02 (12) 54.3 (9) .000 (9)	1.01 (12) 50.9 (8) .000 (8)	1.04 (12) 54.7 (8) .000 (8)	.98 (12) 58.6 (8) .000 (8)	1.00 (12) 56.7 (7) .000 (7)
3	27-39	1.03 (12) 50.7 (7) .000 (7)	1.01 (12) 57.2 (7) .000 (7)	1.01 (12) 51.4 (8) .000 (8)	1.02 (12) 50.3 (7) .000 (7)	1.01 (12) 55.4 (7) .000 (7)	1.09 (12) 46.5 (7) .000 (7)	1.00 (12) 51.1 (7) .000 (7)	1.00 (12) 53.4 (7) .000 (7)
4	39-51	1.09 (12) 44.7 (7) .000 (7)	1.04 (12) 50.6 (8) .000 (8)	1.04 (12) 48.1 (8) .000 (8)	1.02 (12) 54.6 (8) .000 (8)	1.01 (12) 52.9 (8) .000 (8)	1.04 (12) 53.7 (7) .000 (7)	.99 (12) 54.9 (8) .000 (8)	1.03 (12) 50.2 (8) .000 (8)
5	51-63	1.08 (12) 52.6 (7) .000 (7)	1.06 (12) 52.2 (8) .000 (8)	1.04 (12) 51.6 (7) .000 (7)	.98 (12) 55.1 (7) .000 (7)	.96 (12) 51.9 (8) .000 (8)	1.01 (12) 51.3 (7) .000 (7)	1.02 (12) 43.2 (8) .000 (8)	1.02 (12) 48.8 (7) .000 (7)
6	63-75	1.08 (12) 51.1 (7) .000 (7)	1.05 (12) 56.5 (8) .000 (8)	1.00 (12) 43.4 (9) .000 (9)	.94 (12) 49.9 (6) .000 (6)	.94 (12) 48.7 (7) .000 (7)	.96 (12) 46.1 (7) .000 (7)	.97 (12) 44.7 (9) .000 (9)	.99 (12) 46.0 (8) .000 (8)
7	75-90	1.03 (12) 42.3 (5) .000 (5)	.97 (12) 41.6 (8) .000 (8)	.87 (12) 34.3 (7) .000 (7)	.79 (12) 37.0 (5) .000 (5)	.76 (12) 35.8 (5) .000 (5)	.79 (12) 34.9 (5) .000 (5)	.83 (12) 33.3 (8) .000 (8)	.86 (12) 41.8 (7) .000 (7)



(c) Solar-zenith-angle bin 3, 36.87° to 45.57°.

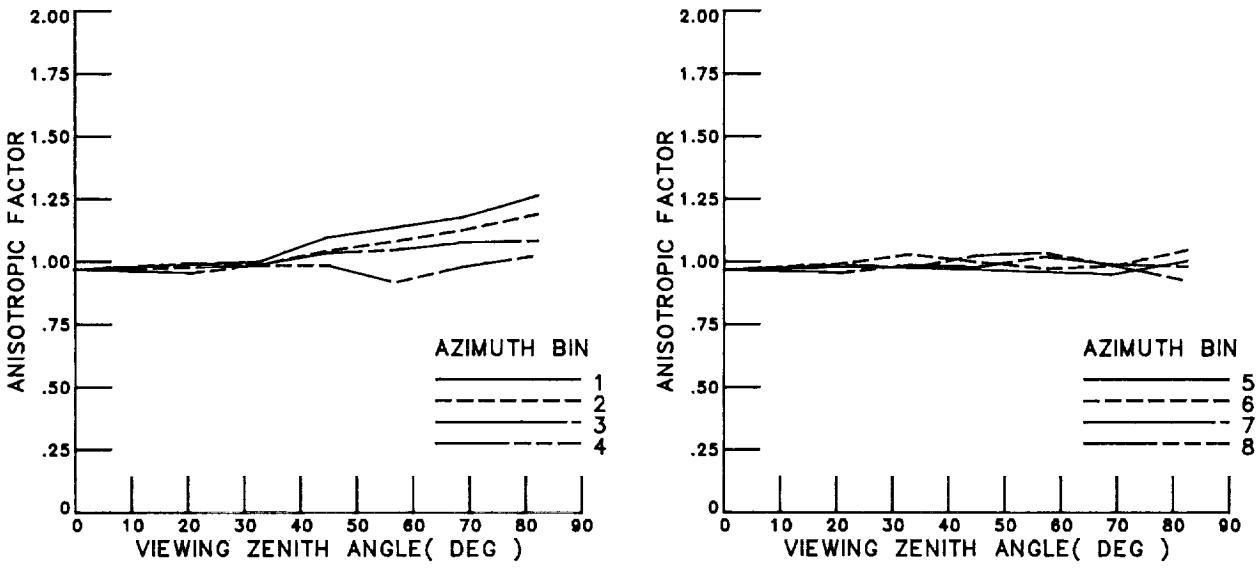
Figure 9. Continued.

SCENE TYPE : CLEAR SNOW
DATA 1 - SW ANISOTROPIC FACTOR
2 - STANDARD DEVIATION OF SW RADIANCES(W/M**2/SR)
3 - CORRELATION OF LW AND SW RADIANCES
( ) - DATA SOURCE

SUN ZENITH : 45.6 - 53.1
MEAN ALBEDO : .6759 (14)
NORMALIZED ALBEDO : 1.0129 (14)

RELATIVE AZIMUTH

BIN NO. / ANGLE(DEG.)	1 0-9	2 9-30	3 30-60	4 60-90	5 90-120	6 120-150	7 150-171	8 171-180
VIEWING ZENITH BIN NO. / ANGLE(DEG.)								
1 0-15	.97 (11)	.97 (11)	.97 (11)	.97 (11)	.97 (11)	.97 (11)	.97 (11)	.97 (11)
	45.7 (11)	45.7 (11)	45.7 (11)	45.7 (11)	45.7 (11)	45.7 (11)	45.7 (11)	45.7 (11)
	-.690 (11)	-.690 (11)	-.690 (11)	-.690 (11)	-.690 (11)	-.690 (11)	-.690 (11)	-.690 (11)
2 15-27	.99 (10)	.99 (10)	.95 (11)	.98 (11)	.98 (11)	.99 (11)	.95 (10)	.99 (10)
	46.4 (10)	44.9 (10)	49.3 (11)	45.4 (11)	42.7 (11)	45.4 (11)	49.6 (10)	48.6 (10)
	-.757 (10)	-.689 (10)	-.726 (11)	-.719 (11)	-.666 (11)	-.713 (11)	-.683 (10)	-.688 (10)
3 27-39	1.00 (10)	.99 (10)	.99 (10)	.98 (10)	.97 (10)	1.03 (10)	.99 (10)	.97 (10)
	42.9 (10)	48.4 (10)	43.6 (10)	42.1 (10)	46.2 (10)	38.4 (10)	43.9 (10)	45.3 (10)
	-.768 (10)	-.745 (10)	-.699 (10)	-.706 (10)	-.705 (10)	-.686 (10)	-.703 (10)	-.531 (10)
4 39-51	1.10 (10)	1.04 (10)	1.03 (10)	.98 (10)	.97 (11)	1.00 (10)	.98 (10)	1.02 (10)
	39.2 (10)	44.0 (10)	41.5 (10)	45.7 (10)	44.1 (11)	44.7 (10)	47.0 (10)	43.4 (10)
	-.631 (10)	-.667 (10)	-.708 (10)	-.736 (10)	-.702 (11)	-.688 (10)	-.714 (10)	-.702 (10)
5 51-63	1.14 (10)	1.08 (10)	1.05 (10)	.92 (10)	.96 (10)	.97 (10)	1.02 (10)	1.03 (10)
	48.2 (10)	46.5 (10)	45.3 (10)	44.9 (10)	44.5 (10)	42.9 (10)	37.5 (10)	42.8 (10)
	-.756 (10)	-.673 (10)	-.722 (10)	-.750 (10)	-.730 (10)	-.733 (10)	-.664 (10)	-.594 (10)
6 63-75	1.18 (10)	1.13 (11)	1.08 (10)	.98 (9)	.95 (10)	.98 (10)	.99 (11)	.98 (10)
	48.5 (10)	52.7 (11)	40.5 (10)	45.3 (9)	42.7 (10)	41.1 (10)	39.7 (11)	39.9 (10)
	-.592 (10)	-.609 (11)	-.636 (10)	-.757 (9)	-.712 (10)	-.790 (10)	-.641 (11)	-.627 (10)
7 75-90	1.26 (9)	1.19 (10)	1.08 (10)	1.02 (5)	1.00 (5)	1.04 (7)	.98 (10)	.92 (10)
	44.9 (9)	44.4 (10)	36.9 (10)	41.7 (5)	40.9 (5)	40.2 (7)	34.0 (10)	39.2 (10)
	-.499 (9)	-.514 (10)	-.575 (10)	-.646 (5)	-.604 (5)	-.457 (7)	-.658 (10)	-.667 (10)



(d) Solar-zenith-angle bin 4, 45.57° to 53.13°.

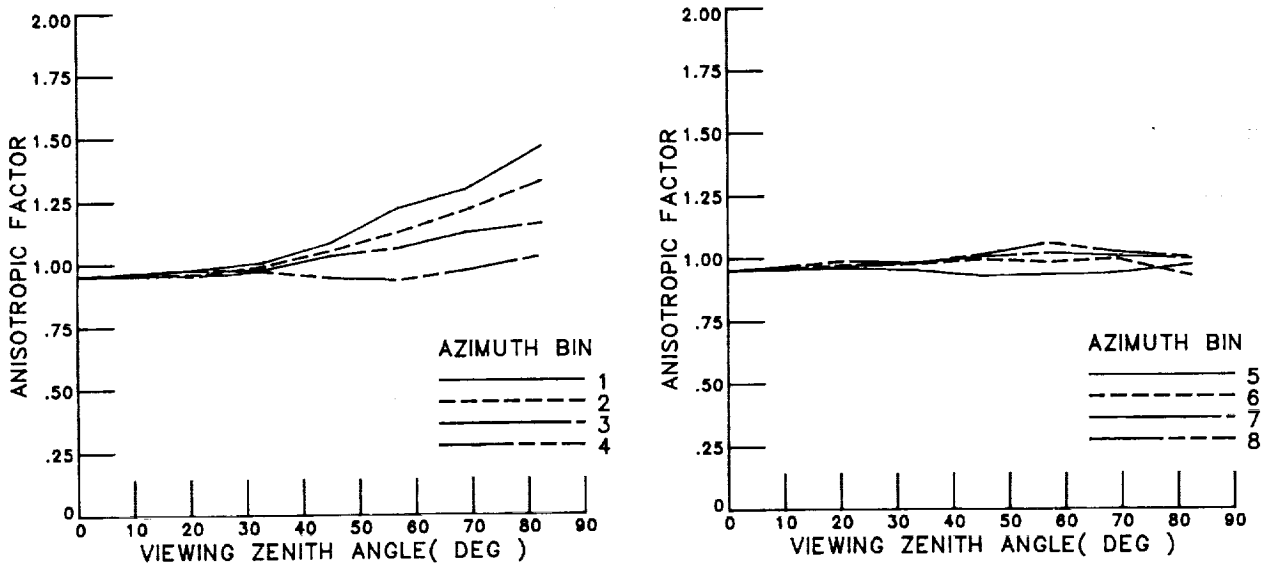
Figure 9. Continued.

SCENE TYPE : CLEAR SNOW
DATA 1 - SW ANISOTROPIC FACTOR
2 - STANDARD DEVIATION OF SW RADIANCES(W/M**2/SR)
3 - CORRELATION OF LW AND SW RADIANCES
( ) - DATA SOURCE

SUN ZENITH : 53.1 - 60.0
MEAN ALBEDO : .6779 (14)
NORMALIZED ALBEDO : 1.0159 (14)

RELATIVE AZIMUTH

BIN NO. / ANGLE(DEG.)		1 0-9	2 9-30	3 30-60	4 60-90	5 90-120	6 120-150	7 150-171	8 171-180
VIEWING ZENITH BIN NO.	ANGLE(DEG.)								
1	0-15	.95 (11)	.95 (11)	.95 (11)	.95 (11)	.95 (11)	.95 (11)	.95 (11)	.95 (11)
		32.2 (11)	32.2 (11)	32.2 (11)	32.2 (11)	32.2 (11)	32.2 (11)	32.2 (11)	32.2 (11)
		-.689 (11)	-.689 (11)	-.689 (11)	-.689 (11)	-.689 (11)	-.689 (11)	-.689 (11)	-.689 (11)
2	15-27	.98 (11)	.96 (11)	.97 (11)	.95 (11)	.96 (11)	.97 (11)	.97 (11)	.99 (11)
		32.1 (11)	33.3 (11)	30.2 (11)	32.9 (11)	32.2 (11)	30.6 (11)	30.5 (11)	28.9 (11)
		-.717 (11)	-.656 (11)	-.677 (11)	-.680 (11)	-.702 (11)	-.697 (11)	-.671 (11)	-.653 (11)
3	27-39	1.01 (10)	.99 (11)	.98 (11)	.97 (11)	.95 (10)	.98 (11)	.98 (11)	.98 (10)
		32.1 (10)	33.9 (11)	33.6 (11)	29.7 (11)	29.2 (10)	30.5 (11)	30.1 (11)	30.7 (10)
		-.699 (10)	-.693 (11)	-.680 (11)	-.675 (11)	-.706 (10)	-.671 (11)	-.667 (11)	-.682 (10)
4	39-51	1.08 (11)	1.03 (11)	1.03 (11)	.94 (11)	.93 (11)	.99 (11)	1.00 (11)	1.01 (11)
		32.0 (11)	35.6 (11)	31.5 (11)	32.4 (11)	32.7 (11)	29.2 (11)	29.3 (11)	29.4 (11)
		-.639 (11)	-.625 (11)	-.653 (11)	-.651 (11)	-.666 (11)	-.682 (11)	-.655 (11)	-.665 (11)
5	51-63	1.22 (10)	1.12 (11)	1.06 (11)	.93 (10)	.93 (11)	.98 (10)	1.02 (11)	1.06 (11)
		30.3 (10)	35.0 (11)	33.2 (11)	34.0 (10)	30.9 (11)	32.2 (10)	27.6 (11)	25.6 (11)
		-.388 (10)	-.549 (11)	-.620 (11)	-.635 (10)	-.663 (11)	-.637 (10)	-.619 (11)	-.596 (11)
6	63-75	1.29 (11)	1.21 (11)	1.12 (11)	.97 (10)	.94 (10)	.99 (10)	1.01 (11)	1.02 (11)
		43.5 (11)	39.3 (11)	35.1 (11)	27.3 (10)	28.4 (10)	27.2 (10)	26.4 (11)	27.7 (11)
		-.388 (11)	-.480 (11)	-.523 (11)	-.631 (10)	-.637 (10)	-.657 (10)	-.611 (11)	-.568 (11)
7	75-90	1.46 (10)	1.33 (11)	1.16 (10)	1.03 (5)	.97 (5)	.93 (8)	.99 (11)	1.00 (11)
		41.9 (10)	38.6 (11)	30.4 (10)	28.6 (5)	28.9 (5)	28.9 (8)	22.3 (11)	25.0 (11)
		-.351 (10)	-.370 (11)	-.376 (10)	-.579 (5)	-.656 (5)	-.831 (8)	-.578 (11)	-.471 (11)



(e) Solar-zenith-angle bin 5, 53.13° to 60.00°.

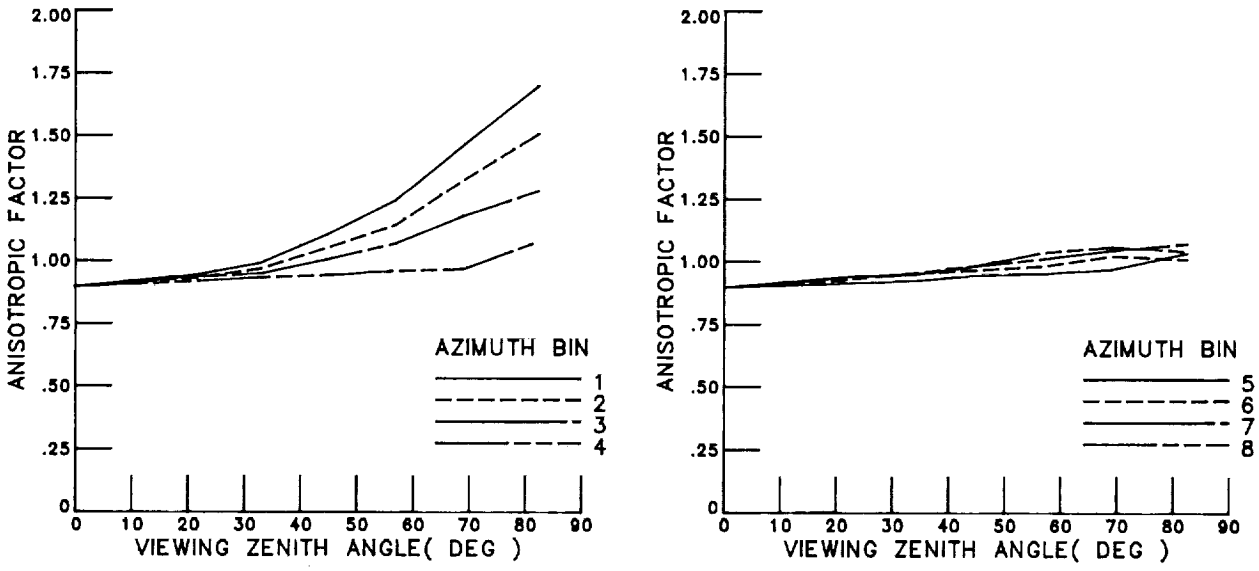
Figure 9. Continued.

SCENE TYPE : CLEAR SNOW
DATA 1 - SW ANISOTROPIC FACTOR
2 - STANDARD DEVIATION OF SW RADIANCES(W/M**2/SR)
3 - CORRELATION OF LW AND SW RADIANCES
( ) - DATA SOURCE

SUN ZENITH : 60.0 - 66.4
MEAN ALBEDO : .6789 (14)
NORMALIZED ALBEDO : 1.0174 (14)

RELATIVE AZIMUTH

BIN NO. / ANGLE(DEG.)		1 0-9	2 9-30	3 30-60	4 60-90	5 90-120	6 120-150	7 150-171	8 171-180
VIEWING ZENITH BIN NO.	ANGLE(DEG.)								
1	0-15	.90 (11)	.90 (11)	.90 (11)	.90 (11)	.90 (11)	.90 (11)	.90 (11)	.90 (11)
		25.1 (11)	25.1 (11)	25.1 (11)	25.1 (11)	25.1 (11)	25.1 (11)	25.1 (11)	25.1 (11)
		-.633 (11)	-.633 (11)	-.633 (11)	-.633 (11)	-.633 (11)	-.633 (11)	-.633 (11)	-.633 (11)
2	15-27	.94 (11)	.93 (11)	.94 (11)	.92 (11)	.91 (11)	.93 (11)	.94 (11)	.94 (11)
		23.8 (11)	24.6 (11)	23.2 (11)	24.1 (11)	24.2 (11)	22.3 (11)	20.7 (11)	21.2 (11)
		-.539 (11)	-.643 (11)	-.592 (11)	-.608 (11)	-.628 (11)	-.591 (11)	-.542 (11)	-.554 (11)
3	27-39	.99 (10)	.97 (11)	.95 (11)	.93 (11)	.92 (11)	.95 (11)	.95 (11)	.95 (10)
		23.6 (10)	26.0 (11)	25.9 (11)	23.3 (11)	22.4 (11)	20.5 (11)	22.4 (11)	21.7 (10)
		-.623 (10)	-.536 (11)	-.606 (11)	-.616 (11)	-.649 (11)	-.562 (11)	-.546 (11)	-.615 (10)
4	39-51	1.11 (11)	1.05 (11)	1.01 (11)	.94 (11)	.95 (11)	.97 (11)	.98 (11)	.99 (11)
		22.3 (11)	26.4 (11)	26.9 (11)	24.6 (11)	20.5 (11)	21.9 (11)	20.0 (11)	21.6 (11)
		-.444 (11)	-.506 (11)	-.602 (11)	-.654 (11)	-.593 (11)	-.616 (11)	-.553 (11)	-.539 (11)
5	51-63	1.24 (10)	1.15 (11)	1.07 (11)	.96 (11)	.95 (11)	.98 (11)	1.01 (11)	1.04 (11)
		29.1 (10)	30.2 (11)	27.5 (11)	22.8 (11)	20.4 (11)	22.1 (11)	20.6 (11)	20.0 (11)
		-.292 (10)	-.450 (11)	-.519 (11)	-.624 (11)	-.635 (11)	-.625 (11)	-.598 (11)	-.538 (11)
6	63-75	1.46 (11)	1.32 (11)	1.18 (11)	.97 (10)	.97 (10)	1.02 (11)	1.05 (11)	1.06 (11)
		41.0 (11)	36.0 (11)	30.2 (11)	24.0 (10)	18.9 (10)	21.5 (11)	18.9 (11)	21.8 (11)
		-.105 (11)	-.347 (11)	-.443 (11)	-.631 (10)	-.607 (10)	-.600 (11)	-.599 (11)	-.456 (11)
7	75-90	1.70 (10)	1.51 (11)	1.28 (11)	1.06 (5)	1.04 (5)	1.01 (9)	1.07 (11)	1.04 (10)
		48.5 (10)	43.0 (11)	31.0 (11)	25.8 (5)	21.6 (5)	20.8 (9)	16.1 (11)	21.4 (10)
		-.084 (10)	-.247 (11)	-.327 (11)	-.526 (5)	-.561 (5)	-.610 (9)	-.530 (11)	-.422 (10)



(f) Solar-zenith-angle bin 6, 60.00° to 66.42°.

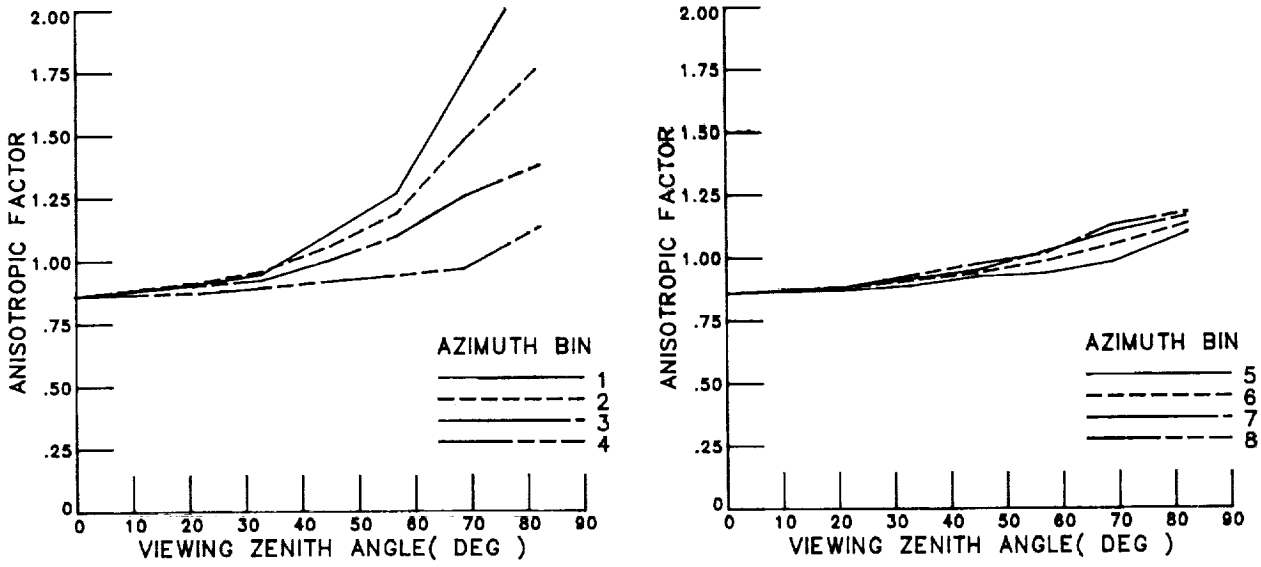
Figure 9. Continued.

SCENE TYPE : CLEAR SNOW
DATA 1 - SW ANISOTROPIC FACTOR
2 - STANDARD DEVIATION OF SW RADIANCES(W/M**2/SR)
3 - CORRELATION OF LW AND SW RADIANCES
( ) - DATA SOURCE

SUN ZENITH : 66.4 - 72.5
MEAN ALBEDO : .6774 (14)
NORMALIZED ALBEDO : 1.0151 (14)

RELATIVE AZIMUTH

VIEWING ZENITH BIN NO.	BIN NO. / ANGLE(DEG.)	1 0-9	2 9-30	3 30-60	4 60-90	5 90-120	6 120-150	7 150-171	8 171-180
1	0-15	.86 (11)	.86 (11)	.86 (11)	.86 (11)	.86 (11)	.86 (11)	.86 (11)	.86 (11)
		19.3 (11)	19.3 (11)	19.3 (11)	19.3 (11)	19.3 (11)	19.3 (11)	19.3 (11)	19.3 (11)
		-.517 (11)	-.517 (11)	-.517 (11)	-.517 (11)	-.517 (11)	-.517 (11)	-.517 (11)	-.517 (11)
2	15-27	.91 (11)	.91 (11)	.90 (11)	.87 (11)	.87 (11)	.88 (11)	.88 (11)	.88 (11)
		16.9 (11)	19.3 (11)	19.4 (11)	19.4 (11)	19.3 (11)	18.2 (11)	18.8 (11)	18.1 (11)
		-.466 (11)	-.483 (11)	-.435 (11)	-.491 (11)	-.499 (11)	-.525 (11)	-.481 (11)	-.421 (11)
3	27-39	.95 (10)	.96 (11)	.92 (11)	.89 (11)	.89 (11)	.91 (11)	.92 (11)	.93 (10)
		21.5 (10)	20.5 (11)	20.5 (11)	20.0 (11)	19.1 (11)	18.2 (11)	18.2 (11)	17.0 (10)
		-.500 (10)	-.376 (11)	-.487 (11)	-.551 (11)	-.609 (11)	-.541 (11)	-.438 (11)	-.471 (10)
4	39-51	1.11 (11)	1.06 (11)	1.06 (11)	.92 (11)	.93 (11)	.94 (11)	.95 (11)	.98 (11)
		21.4 (11)	22.6 (11)	21.7 (11)	20.0 (11)	17.7 (11)	18.9 (11)	18.6 (11)	16.1 (11)
		-.266 (11)	-.368 (11)	-.516 (11)	-.524 (11)	-.602 (11)	-.516 (11)	-.511 (11)	-.425 (11)
5	51-63	1.27 (11)	1.19 (11)	1.10 (11)	.94 (11)	.94 (11)	.99 (11)	1.02 (11)	1.02 (11)
		26.5 (11)	27.1 (11)	22.9 (11)	20.2 (11)	18.6 (11)	19.3 (11)	17.5 (11)	16.6 (11)
		-.229 (11)	-.299 (11)	-.422 (11)	-.508 (11)	-.572 (11)	-.602 (11)	-.490 (11)	-.462 (11)
6	63-75	1.72 (11)	1.46 (11)	1.25 (11)	.97 (10)	.98 (11)	1.05 (11)	1.10 (11)	1.13 (11)
		44.3 (11)	38.5 (11)	29.6 (11)	20.0 (10)	18.8 (11)	19.7 (11)	17.5 (11)	16.3 (11)
		-.029 (11)	-.135 (11)	-.250 (11)	-.505 (10)	-.545 (11)	-.440 (11)	-.507 (11)	-.362 (11)
7	75-90	2.22 (10)	1.77 (11)	1.38 (11)	1.13 (8)	1.10 (5)	1.13 (10)	1.16 (11)	1.18 (10)
		62.3 (10)	49.3 (11)	33.5 (11)	24.3 (8)	20.3 (5)	18.9 (10)	16.1 (11)	15.4 (10)
		-.019 (10)	-.112 (11)	-.202 (11)	-.390 (8)	-.446 (5)	-.422 (10)	-.506 (11)	-.404 (10)



(g) Solar-zenith-angle bin 7, 66.42° to 72.54°.

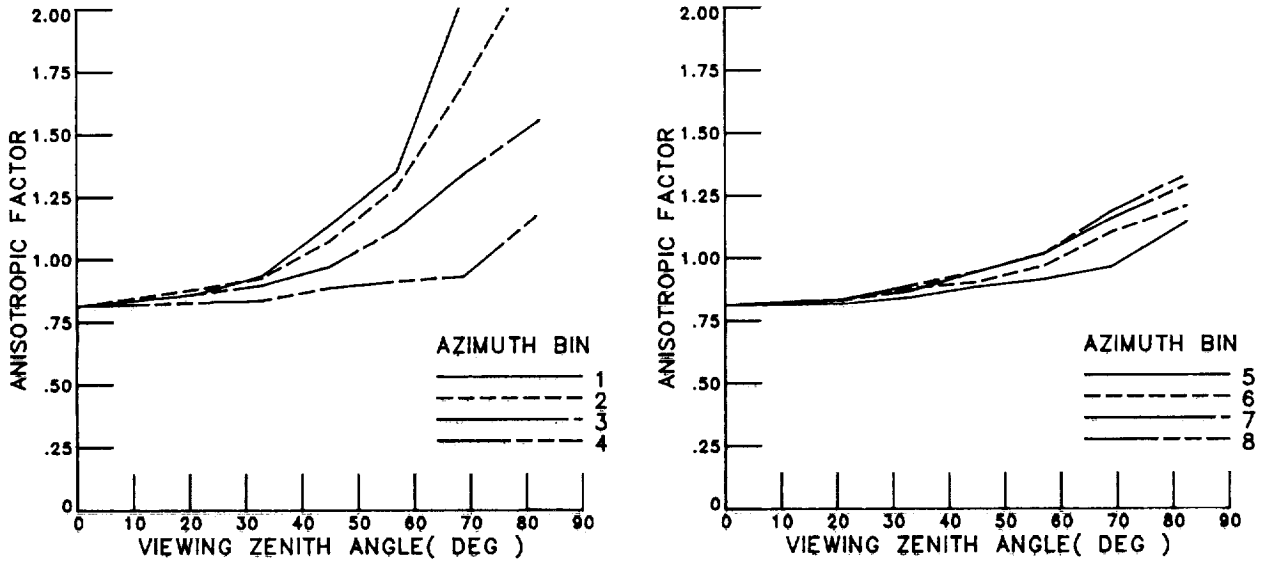
Figure 9. Continued.

SCENE TYPE : CLEAR SNOW
DATA 1 - SW ANISOTROPIC FACTOR
2 - STANDARD DEVIATION OF SW RADIANCES(W/M**2/SR)
3 - CORRELATION OF LW AND SW RADIANCES
( ) - DATA SOURCE

SUN ZENITH : 72.5 - 78.5
MEAN ALBEDO : .6708 (14)
NORMALIZED ALBEDO : 1.0052 (14)

RELATIVE AZIMUTH

BIN NO.	VIEWING ZENITH ANGLE(DEG.)	1 0-9	2 9-30	3 30-60	4 60-90	5 90-120	6 120-150	7 150-171	8 171-180
1	0-15	.81 (11)	.81 (11)	.81 (11)	.81 (11)	.81 (11)	.81 (11)	.81 (11)	.81 (11)
		14.3 (11)	14.3 (11)	14.3 (11)	14.3 (11)	14.3 (11)	14.3 (11)	14.3 (11)	14.3 (11)
		-.408 (11)	-.408 (11)	-.408 (11)	-.408 (11)	-.408 (11)	-.408 (11)	-.408 (11)	-.408 (11)
2	15-27	.86 (11)	.86 (11)	.86 (11)	.83 (11)	.82 (11)	.83 (11)	.83 (11)	.83 (11)
		14.6 (11)	14.4 (11)	15.0 (11)	14.8 (11)	14.3 (11)	14.2 (11)	14.1 (11)	13.4 (11)
		-.366 (11)	-.336 (11)	-.372 (11)	-.374 (11)	-.396 (11)	-.385 (11)	-.380 (11)	-.376 (11)
3	27-39	.93 (10)	.92 (11)	.90 (11)	.84 (11)	.84 (11)	.88 (11)	.87 (11)	.89 (10)
		15.6 (10)	16.5 (11)	14.9 (11)	15.2 (11)	14.4 (11)	13.7 (11)	13.7 (11)	12.8 (10)
		-.279 (10)	-.292 (11)	-.359 (11)	-.463 (11)	-.490 (11)	-.410 (11)	-.355 (11)	-.430 (10)
4	39-51	1.14 (11)	1.07 (11)	.97 (11)	.89 (11)	.88 (11)	.90 (11)	.94 (11)	.94 (11)
		18.7 (11)	18.2 (11)	17.2 (11)	15.2 (11)	13.8 (11)	14.8 (11)	13.0 (11)	12.8 (11)
		-.151 (11)	-.224 (11)	-.303 (11)	-.410 (11)	-.439 (11)	-.381 (11)	-.411 (11)	-.334 (11)
5	51-63	1.35 (11)	1.29 (11)	1.12 (11)	.91 (11)	.91 (11)	.97 (11)	1.02 (11)	1.02 (11)
		25.2 (11)	22.2 (11)	18.3 (11)	15.0 (11)	14.1 (11)	14.9 (11)	13.3 (11)	13.2 (11)
		.016 (11)	-.043 (11)	-.183 (11)	-.350 (11)	-.424 (11)	-.395 (11)	-.402 (11)	-.385 (11)
6	63-75	2.05 (11)	1.70 (11)	1.34 (11)	.93 (10)	.96 (11)	1.10 (11)	1.16 (11)	1.19 (11)
		51.3 (11)	36.6 (11)	25.4 (11)	16.0 (10)	13.6 (11)	15.3 (11)	13.9 (11)	14.1 (11)
		.061 (11)	-.056 (11)	-.110 (11)	-.313 (10)	-.435 (11)	-.288 (11)	-.414 (11)	-.257 (11)
7	75-90	3.06 (10)	2.21 (11)	1.55 (11)	1.18 (5)	1.14 (5)	1.21 (10)	1.29 (11)	1.33 (11)
		70.7 (10)	52.5 (11)	31.4 (11)	21.0 (5)	17.0 (5)	14.9 (10)	13.6 (11)	13.4 (11)
		.014 (10)	.012 (11)	-.060 (11)	-.228 (5)	-.332 (5)	-.313 (10)	-.385 (11)	-.199 (11)



(h) Solar-zenith-angle bin 8, 72.54° to 78.46°.

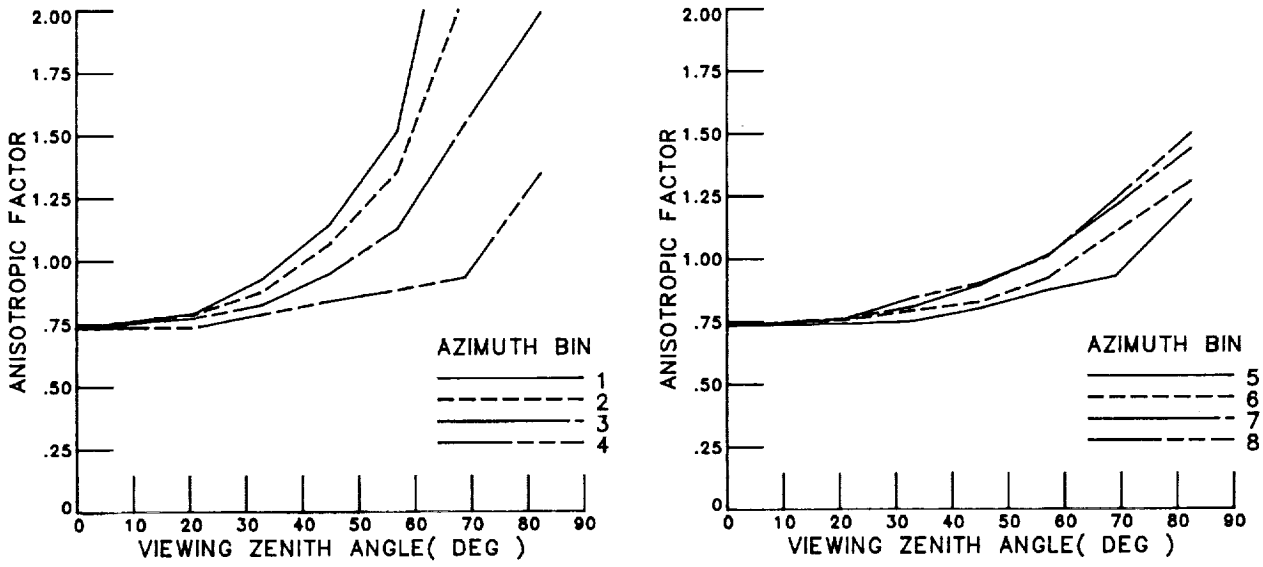
Figure 9. Continued.

SCENE TYPE : CLEAR SNOW
DATA 1 - SW ANISOTROPIC FACTOR
2 - STANDARD DEVIATION OF SW RADIANCES(W/M**2/SR)
3 - CORRELATION OF LW AND SW RADIANCES
( ) - DATA SOURCE

SUN ZENITH : 78.5 - 84.3
MEAN ALBEDO : .6502 (14)
NORMALIZED ALBEDO : .9744 (14)

RELATIVE AZIMUTH

VIEWING ZENITH BIN NO.	BIN NO. / ANGLE(DEG.)	1 0-9	2 9-30	3 30-60	4 60-90	5 90-120	6 120-150	7 150-171	8 171-180
1	0-15	.73 (11)	.73 (11)	.73 (11)	.73 (11)	.73 (11)	.73 (11)	.73 (11)	.73 (11)
		8.2 (11)	8.2 (11)	8.2 (11)	8.2 (11)	8.2 (11)	8.2 (11)	8.2 (11)	8.2 (11)
		-.471 (11)	-.471 (11)	-.471 (11)	-.471 (11)	-.471 (11)	-.471 (11)	-.471 (11)	-.471 (11)
2	15-27	.79 (11)	.79 (11)	.77 (11)	.74 (11)	.74 (11)	.76 (11)	.76 (11)	.76 (11)
		8.8 (11)	9.0 (11)	8.9 (11)	8.9 (11)	8.7 (11)	8.5 (11)	7.8 (11)	8.1 (11)
		-.429 (11)	-.439 (11)	-.446 (11)	-.458 (11)	-.431 (11)	-.463 (11)	-.478 (11)	-.420 (11)
3	27-39	.93 (10)	.88 (11)	.83 (11)	.79 (11)	.75 (11)	.80 (11)	.81 (11)	.85 (10)
		8.2 (10)	9.3 (11)	10.2 (11)	8.4 (11)	8.6 (11)	8.2 (11)	7.8 (11)	8.0 (10)
		-.274 (10)	-.350 (11)	-.343 (11)	-.441 (11)	-.482 (11)	-.465 (11)	-.464 (11)	-.527 (10)
4	39-51	1.14 (11)	1.07 (11)	.95 (11)	.84 (11)	.80 (11)	.83 (11)	.90 (11)	.90 (11)
		10.5 (11)	10.4 (11)	9.3 (11)	8.4 (11)	8.5 (11)	8.6 (11)	7.7 (11)	8.2 (11)
		-.157 (11)	-.256 (11)	-.308 (11)	-.363 (11)	-.425 (11)	-.349 (11)	-.425 (11)	-.354 (11)
5	51-63	1.51 (10)	1.35 (11)	1.13 (11)	.88 (11)	.88 (11)	.92 (11)	1.01 (11)	1.01 (10)
		16.5 (10)	14.8 (11)	11.4 (11)	8.6 (11)	8.1 (11)	8.9 (11)	7.7 (11)	7.7 (10)
		.008 (10)	-.078 (11)	-.046 (11)	-.300 (11)	-.405 (11)	-.306 (11)	-.387 (11)	-.347 (10)
6	63-75	2.74 (11)	2.07 (11)	1.54 (11)	.93 (10)	.93 (11)	1.11 (11)	1.21 (11)	1.24 (11)
		45.3 (11)	29.2 (11)	18.1 (11)	9.7 (10)	8.8 (11)	9.8 (11)	8.9 (11)	8.8 (11)
		.021 (11)	.054 (11)	.012 (11)	-.324 (10)	-.520 (11)	-.225 (11)	-.335 (11)	-.300 (11)
7	75-90	4.43 (10)	3.02 (11)	1.99 (10)	1.35 (5)	1.23 (5)	1.31 (10)	1.44 (11)	1.50 (10)
		63.5 (10)	43.2 (11)	23.6 (10)	14.5 (5)	11.9 (5)	10.8 (10)	9.6 (11)	9.0 (10)
		-.085 (10)	.019 (11)	.056 (10)	-.185 (5)	-.335 (5)	-.254 (10)	-.390 (11)	-.277 (10)



(i) Solar-zenith-angle bin 9, 78.46° to 84.26°.

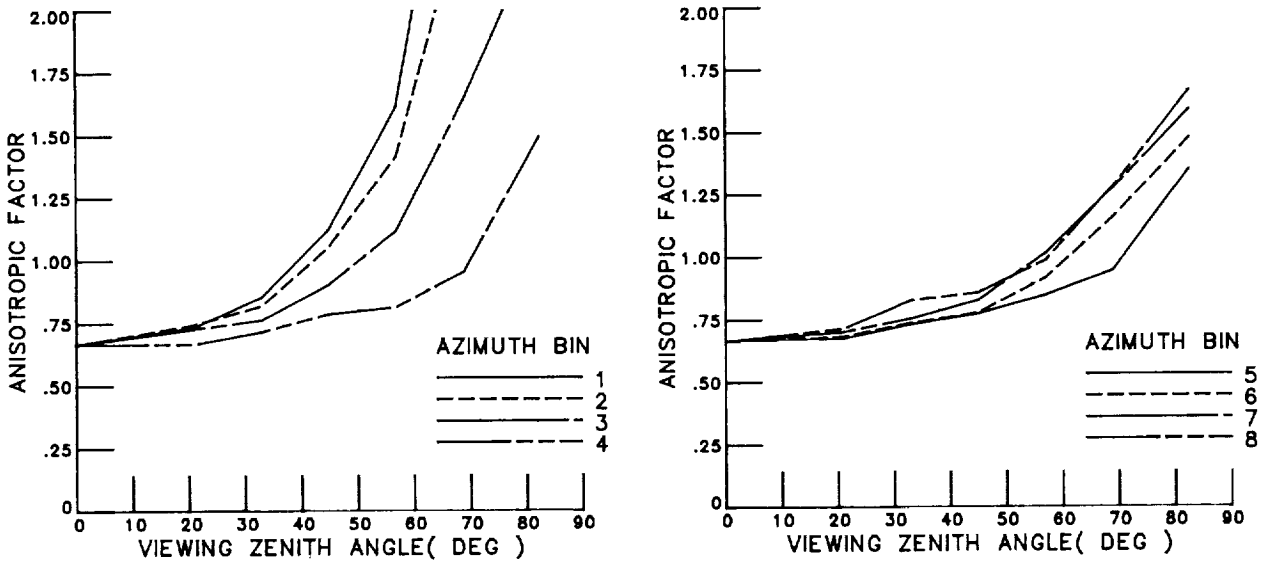
Figure 9. Continued.

SCENE TYPE : CLEAR SNOW
DATA 1 - SW ANISOTROPIC FACTOR
2 - STANDARD DEVIATION OF SW RADIANCES(W/M**2/SR)
3 - CORRELATION OF LW AND SW RADIANCES
( ) - DATA SOURCE

SUN ZENITH : 84.3 - 90.0
MEAN ALBEDO : .6189 (14)
NORMALIZED ALBEDO : .9275 (14)

RELATIVE AZIMUTH

BIN NO. / ANGLE(DEG.)		1 0-9	2 9-30	3 30-60	4 60-90	5 90-120	6 120-150	7 150-171	8 171-180
VIEWING ZENITH BIN NO.	ANGLE(DEG.)								
1	0-15	.67 (11)	.67 (11)	.67 (11)	.67 (11)	.67 (11)	.67 (11)	.67 (11)	.67 (11)
		2.4 (11)	2.4 (11)	2.4 (11)	2.4 (11)	2.4 (11)	2.4 (11)	2.4 (11)	2.4 (11)
		-.411 (11)	-.411 (11)	-.411 (11)	-.411 (11)	-.411 (11)	-.411 (11)	-.411 (11)	-.411 (11)
2	15-27	.74 (10)	.74 (10)	.73 (10)	.67 (10)	.68 (10)	.68 (10)	.70 (10)	.72 (10)
		2.4 (10)	2.5 (10)	2.6 (10)	2.7 (10)	2.7 (10)	2.9 (10)	2.4 (10)	2.4 (10)
		-.346 (10)	-.438 (10)	-.411 (10)	-.369 (10)	-.305 (10)	-.354 (10)	-.400 (10)	-.458 (10)
3	27-39	.85 (9)	.82 (10)	.76 (10)	.72 (10)	.73 (10)	.74 (10)	.76 (10)	.83 (9)
		2.7 (9)	3.0 (10)	2.9 (10)	2.5 (10)	2.6 (10)	2.8 (10)	2.3 (10)	2.7 (9)
		-.239 (9)	-.337 (10)	-.468 (10)	-.412 (10)	-.472 (10)	-.348 (10)	-.474 (10)	-.332 (9)
4	39-51	1.12 (10)	1.05 (10)	.91 (10)	.79 (10)	.77 (10)	.78 (10)	.83 (10)	.86 (10)
		3.4 (10)	3.0 (10)	3.1 (10)	2.5 (10)	2.5 (10)	3.1 (10)	2.3 (10)	2.9 (10)
		-.246 (10)	-.231 (10)	-.286 (10)	-.323 (10)	-.405 (10)	-.196 (10)	-.382 (10)	-.225 (10)
5	51-63	1.61 (10)	1.42 (10)	1.12 (10)	.82 (10)	.85 (10)	.92 (10)	1.01 (10)	.99 (10)
		5.9 (10)	5.0 (10)	3.6 (10)	2.7 (10)	2.5 (10)	3.2 (10)	2.6 (10)	2.5 (10)
		-.178 (10)	-.024 (10)	-.058 (10)	-.125 (10)	-.404 (10)	-.333 (10)	-.368 (10)	-.248 (10)
6	63-75	3.10 (10)	2.38 (11)	1.64 (10)	.96 (10)	.95 (10)	1.16 (10)	1.28 (11)	1.28 (10)
		20.2 (10)	11.6 (11)	6.1 (10)	3.7 (10)	3.0 (10)	3.5 (10)	3.2 (11)	3.7 (10)
		-.050 (10)	-.013 (11)	-.176 (10)	-.227 (10)	-.412 (10)	-.204 (10)	-.314 (11)	-.185 (10)
7	75-90	5.90 (9)	3.67 (10)	2.32 (10)	1.50 (5)	1.35 (5)	1.48 (9)	1.59 (10)	1.67 (9)
		29.8 (9)	17.8 (10)	8.8 (10)	5.4 (5)	4.3 (5)	4.1 (9)	3.4 (10)	3.1 (9)
		-.028 (9)	-.173 (10)	-.229 (10)	-.192 (5)	-.249 (5)	-.015 (9)	-.285 (10)	-.223 (9)



(j) Solar-zenith-angle bin 10, 84.26° to 90.00°.

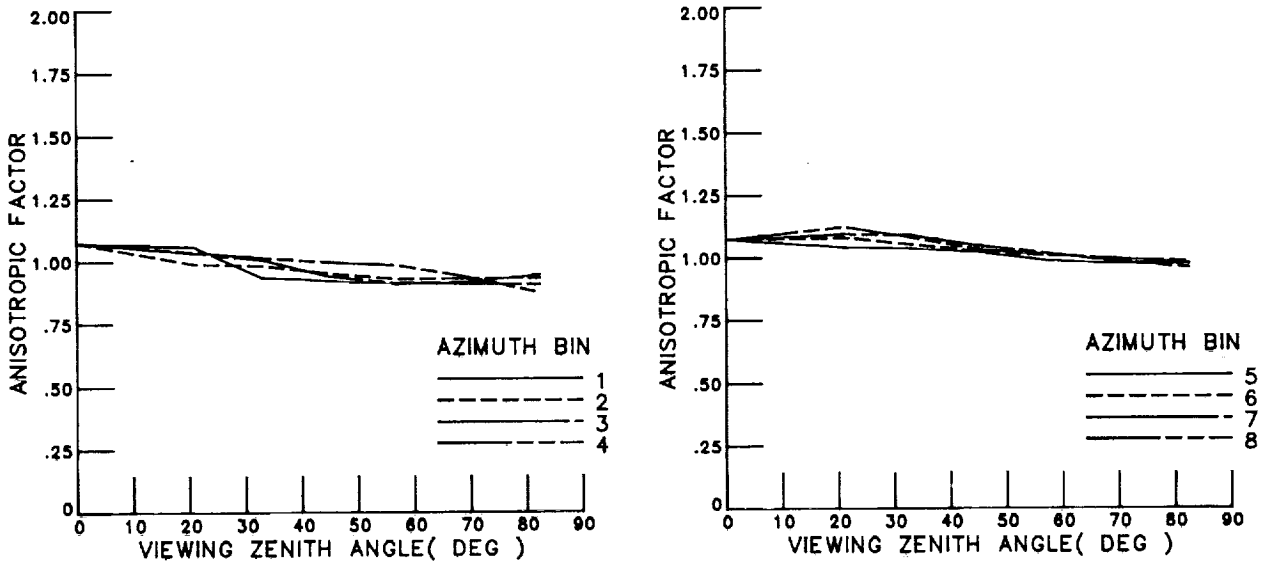
Figure 9. Concluded.

SCENE TYPE : CLEAR DESERT
DATA 1 - SW ANISOTROPIC FACTOR
2 - STANDARD DEVIATION OF SW RADIANCES(W/M**2/SR)
3 - CORRELATION OF LW AND SW RADIANCES
( ) - DATA SOURCE

SUN ZENITH : .C - 25.8
MEAN ALBEDO : .2369 (14)
NORMALIZED ALBEDO : 1.0000 (14)

RELATIVE AZIMUTH

BIN NO. / ANGLE(DEG.)		1 0-9	2 9-30	3 30-60	4 60-90	5 90-120	6 120-150	7 150-171	8 171-180
VIEWING ZENITH BIN NO.	ANGLE(DEG.)								
1	0-15	1.07 (11)	1.07 (11)	1.07 (11)	1.07 (11)	1.07 (11)	1.07 (11)	1.07 (11)	1.07 (11)
		23.0 (11)	23.0 (11)	23.0 (11)	23.0 (11)	23.0 (11)	23.0 (11)	23.0 (11)	23.0 (11)
		-.100 (11)	-.100 (11)	-.100 (11)	-.100 (11)	-.100 (11)	-.100 (11)	-.100 (11)	-.100 (11)
2	15-27	1.06 (10)	.99 (11)	1.03 (11)	1.04 (11)	1.04 (11)	1.08 (11)	1.09 (11)	1.12 (11)
		23.8 (10)	24.1 (11)	24.5 (11)	24.0 (11)	23.0 (11)	22.7 (11)	21.6 (11)	22.0 (11)
		-.026 (10)	.004 (11)	-.010 (11)	-.081 (11)	-.095 (11)	-.194 (11)	-.227 (11)	-.252 (11)
3	27-39	.95 (10)	.98 (11)	1.01 (11)	1.01 (11)	1.04 (11)	1.05 (11)	1.09 (11)	1.08 (10)
		23.8 (10)	24.2 (11)	24.2 (11)	24.1 (11)	23.4 (11)	22.4 (11)	22.3 (11)	21.6 (10)
		-.085 (10)	-.087 (11)	-.045 (11)	-.130 (11)	-.176 (11)	-.229 (11)	-.229 (11)	-.292 (10)
4	39-51	.92 (10)	.95 (11)	.94 (11)	1.00 (11)	1.02 (11)	1.02 (11)	1.05 (11)	1.03 (11)
		25.6 (10)	24.8 (11)	24.7 (11)	24.0 (11)	23.5 (11)	22.3 (11)	22.8 (11)	22.4 (11)
		.045 (10)	-.103 (11)	.014 (11)	-.049 (11)	-.151 (11)	-.214 (11)	-.188 (11)	-.136 (11)
5	51-63	.91 (10)	.93 (11)	.91 (11)	.98 (10)	.99 (11)	1.01 (11)	1.02 (11)	1.01 (11)
		23.8 (10)	24.6 (11)	24.6 (11)	24.0 (10)	22.6 (11)	22.1 (11)	22.4 (11)	22.3 (11)
		-.066 (10)	-.055 (11)	.031 (11)	-.064 (10)	-.149 (11)	-.149 (11)	-.190 (11)	-.153 (11)
6	63-75	.91 (10)	.93 (11)	.91 (11)	.94 (11)	.97 (11)	1.00 (11)	.98 (11)	.99 (11)
		24.2 (10)	24.1 (11)	23.5 (11)	22.4 (11)	22.2 (11)	20.9 (11)	21.5 (11)	21.3 (11)
		-.042 (10)	-.142 (11)	-.099 (11)	-.161 (11)	-.240 (11)	-.148 (11)	-.110 (11)	-.139 (11)
7	75-90	.94 (10)	.93 (10)	.90 (11)	.87 (10)	.98 (10)	.98 (10)	.96 (11)	.98 (10)
		24.7 (10)	21.9 (10)	21.4 (11)	18.8 (10)	19.0 (10)	18.6 (10)	18.2 (11)	20.0 (10)
		-.153 (10)	-.139 (10)	-.087 (11)	-.093 (10)	-.276 (10)	-.214 (10)	-.094 (11)	-.242 (10)



(a) Solar-zenith-angle bin 1, 0° to 25.84°.

Figure 10. Bidirectional model for clear over desert. (See table 5 for explanation of data sources.)

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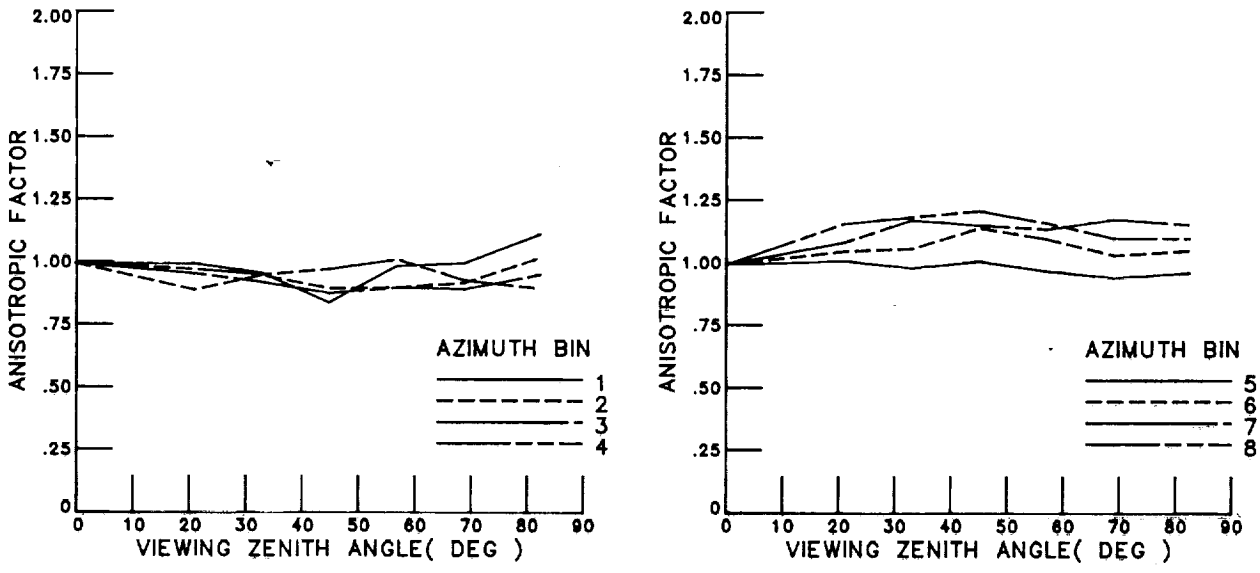
SCENE TYPE : CLEAR DESERT
DATA 1 - SW ANISOTROPIC FACTOR
2 - STANDARD DEVIATION OF SW RADIANCES(W/M**2/SR)
3 - CORRELATION OF LW AND SW RADIANCES
( ) - DATA SOURCE

SUN ZENITH : 25.8 - 36.9
MEAN ALBEDO : .2388 (14)
NORMALIZED ALBEDO : 1.0080 (14)

RELATIVE AZIMUTH

VIEWING ZENITH BIN NO.	VIEWING ZENITH ANGLE(DEG.)	BIN NO. 1 ANGLE(DEG.) 0-9	2 9-30	3 30-60	4 60-90	5 90-120	6 120-150	7 150-171	8 171-180
1	0-15	.99 (11)	.99 (11)	.99 (11)	.99 (11)	.99 (11)	.99 (11)	.99 (11)	.99 (11)
		24.4 (11)	24.4 (11)	24.4 (11)	24.4 (11)	24.4 (11)	24.4 (11)	24.4 (11)	24.4 (11)
		.090 (11)	.090 (11)	.090 (11)	.090 (11)	.090 (11)	.090 (11)	.090 (11)	.090 (11)
2	15-27	.99 (10)	.89 (10)	.95 (11)	.97 (11)	1.01 (11)	1.05 (11)	1.08 (10)	1.16 (10)
		25.6 (10)	24.8 (10)	25.6 (11)	24.3 (11)	25.0 (11)	24.2 (11)	23.7 (10)	23.0 (10)
		-.007 (10)	.155 (10)	.008 (11)	-.003 (11)	.019 (11)	-.015 (11)	.080 (10)	-.055 (10)
3	27-39	.95 (10)	.95 (10)	.92 (10)	.95 (10)	.98 (10)	1.06 (10)	1.17 (10)	1.18 (10)
		26.9 (10)	26.9 (10)	25.7 (10)	22.3 (10)	22.2 (10)	22.0 (10)	24.7 (10)	21.3 (10)
		-.025 (10)	-.044 (10)	-.037 (10)	.102 (10)	-.064 (10)	-.013 (10)	-.042 (10)	.045 (10)
4	39-51	.84 (10)	.89 (11)	.87 (10)	.97 (10)	1.01 (11)	1.14 (10)	1.15 (11)	1.21 (10)
		24.9 (10)	27.1 (11)	24.2 (10)	25.0 (10)	24.4 (11)	26.6 (10)	23.7 (11)	23.9 (10)
		.025 (10)	-.015 (11)	.044 (10)	-.089 (10)	-.110 (11)	-.108 (10)	-.029 (11)	-.068 (10)
5	51-63	.98 (10)	.90 (10)	.90 (10)	1.01 (10)	.97 (10)	1.10 (10)	1.13 (10)	1.16 (10)
		28.8 (10)	26.7 (10)	25.7 (10)	27.2 (10)	23.2 (10)	26.0 (10)	22.4 (10)	22.7 (10)
		.012 (10)	-.096 (10)	-.037 (10)	-.102 (10)	.011 (10)	.058 (10)	-.022 (10)	.026 (10)
6	63-75	1.00 (10)	.92 (11)	.89 (11)	.93 (10)	.94 (10)	1.03 (10)	1.17 (11)	1.10 (11)
		27.2 (10)	24.2 (11)	23.8 (11)	26.6 (10)	21.4 (10)	24.2 (10)	24.0 (11)	20.5 (11)
		-.146 (10)	-.124 (11)	-.023 (11)	.293 (10)	-.004 (10)	-.103 (10)	-.142 (11)	-.003 (11)
7	75-90	1.11 (9)	1.02 (10)	.95 (10)	.89 (8)	.96 (5)	1.05 (6)	1.15 (10)	1.10 (10)
		26.4 (9)	25.9 (10)	22.2 (10)	25.4 (8)	22.8 (5)	23.7 (6)	22.0 (10)	19.6 (10)
		-.135 (9)	-.251 (10)	-.066 (10)	.132 (8)	.034 (5)	-.045 (6)	-.045 (10)	-.063 (10)



(b) Solar-zenith-angle bin 2, 25.84° to 36.87°.

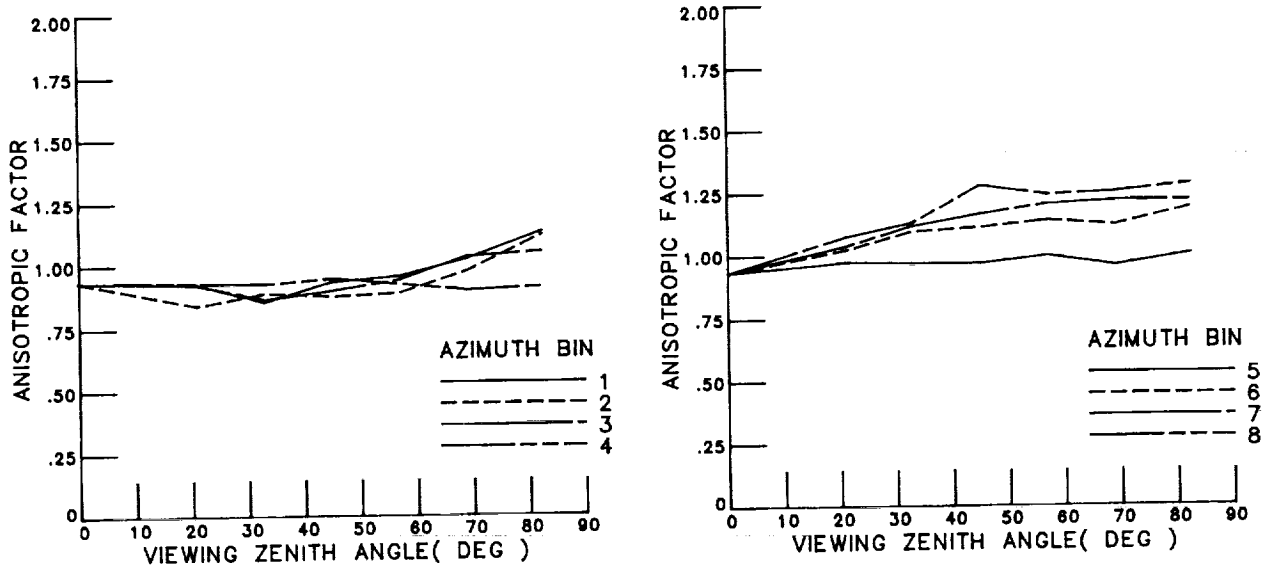
Figure 10. Continued.

SCENE TYPE : CLEAR DESERT
DATA 1 - SW ANISOTROPIC FACTOR
2 - STANDARD DEVIATION OF SW RADIANCES(W/M**2/SR)
3 - CORRELATION OF LW AND SW RADIANCES
( ) - DATA SOURCE

SUN ZENITH : 36.9 - 45.6
MEAN ALBEDO : .2411 (14)
NORMALIZED ALBEDO : 1.0177 (14)

RELATIVE AZIMUTH

BIN NO. / ANGLE(DEG.)		1 0-9	2 9-30	3 30-60	4 60-90	5 90-120	6 120-150	7 150-171	8 171-180
VIEWING ZENITH BIN NO.	ANGLE(DEG.)								
1	0-15	.93 (11) 25.8 (11) -.179 (11)	.93 (11) 25.8 (11) -.179 (11)	.93 (11) 25.8 (11) -.179 (11)	.93 (11) 25.8 (11) -.179 (11)	.93 (11) 25.8 (11) -.179 (11)	.93 (11) 25.8 (11) -.179 (11)	.93 (11) 25.8 (11) -.179 (11)	.93 (11) 25.8 (11) -.179 (11)
2	15-27	.92 (10) 26.4 (10) -.281 (10)	.84 (10) 26.8 (10) -.319 (10)	.92 (11) 26.6 (11) -.237 (11)	.93 (11) 26.1 (11) -.206 (11)	.97 (11) 25.1 (11) -.285 (11)	1.02 (11) 25.7 (11) -.244 (11)	1.04 (10) 25.5 (10) -.115 (10)	1.08 (10) 27.3 (10) -.297 (10)
3	27-39	.86 (10) 27.7 (10) -.368 (10)	.89 (10) 26.8 (10) -.176 (10)	.87 (10) 26.9 (10) -.192 (10)	.93 (10) 25.7 (10) -.161 (10)	.97 (10) 26.4 (10) -.283 (10)	1.10 (10) 24.9 (10) -.305 (10)	1.12 (10) 23.3 (10) -.173 (10)	1.13 (9) 23.4 (9) -.192 (9)
4	39-51	.93 (10) 30.4 (10) -.267 (10)	.86 (11) 28.0 (11) -.135 (11)	.90 (10) 28.1 (10) -.210 (10)	.95 (10) 26.3 (10) -.306 (10)	.97 (11) 26.5 (11) -.261 (11)	1.11 (10) 25.2 (10) -.346 (10)	1.16 (11) 23.6 (11) -.285 (11)	1.28 (10) 23.1 (10) -.253 (10)
5	51-63	.95 (10) 29.3 (10) -.251 (10)	.89 (10) 27.5 (10) -.171 (10)	.94 (10) 27.3 (10) -.186 (10)	.92 (10) 26.6 (10) -.384 (10)	1.00 (10) 25.4 (10) -.154 (10)	1.14 (10) 24.9 (10) -.361 (10)	1.20 (10) 24.0 (10) -.315 (10)	1.24 (10) 24.5 (10) -.235 (10)
6	63-75	1.02 (10) 30.8 (10) -.241 (10)	.97 (11) 28.5 (11) -.221 (11)	1.03 (11) 27.2 (11) -.180 (11)	.90 (10) 24.4 (10) -.189 (10)	.96 (10) 24.2 (10) -.180 (10)	1.12 (10) 24.8 (10) -.257 (10)	1.22 (11) 23.5 (11) -.306 (11)	1.25 (11) 23.1 (11) -.229 (11)
7	75-90	1.13 (10) 29.9 (10) -.531 (10)	1.12 (10) 28.6 (10) -.404 (10)	1.05 (10) 26.5 (10) -.266 (10)	.91 (7) 25.3 (7) .043 (7)	1.00 (5) 24.0 (5) -.169 (5)	1.19 (8) 22.4 (8) -.359 (8)	1.22 (10) 21.5 (10) -.269 (10)	1.28 (10) 20.4 (10) -.195 (10)



(c) Solar-zenith-angle bin 3, 36.87° to 45.57°.

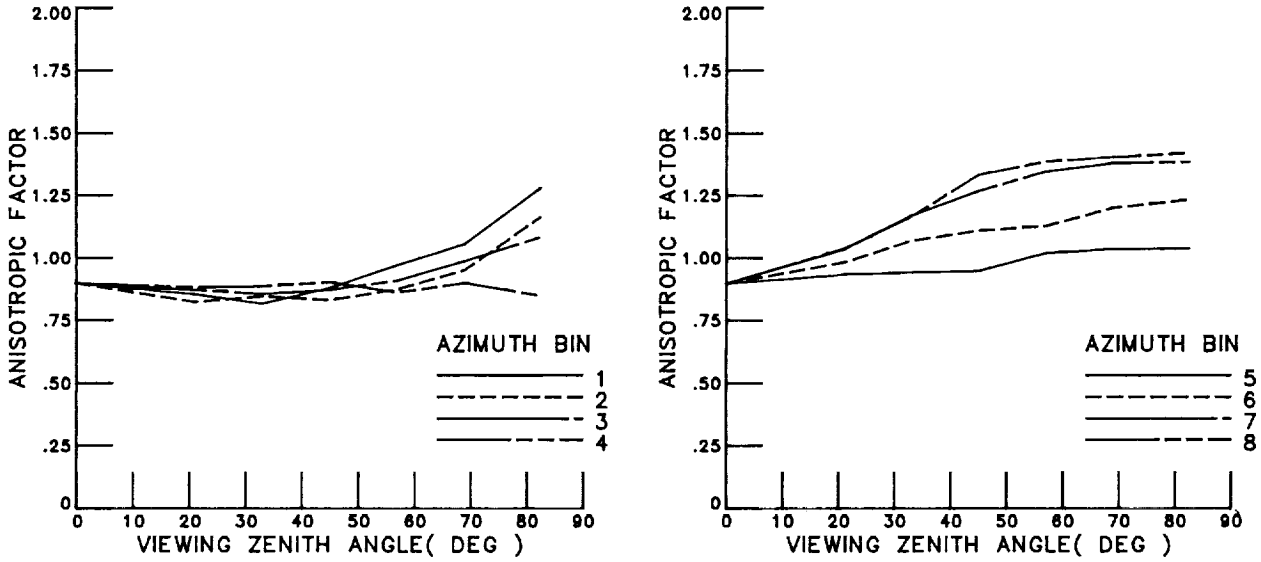
Figure 10. Continued.

SCENE TYPE : CLEAR DESERT
DATA 1 - SW ANISOTROPIC FACTOR
2 - STANDARD DEVIATION OF SW RADIANCES(W/M**2/SR)
3 - CORRELATION OF LW AND SW RADIANCES
( ) - DATA SOURCE

SUN ZENITH : 45.6 - 53.1
MEAN ALBEDO : .2437 (14)
NORMALIZED ALBEDO : 1.0287 (14)

RELATIVE AZIMUTH

BIN NO.	1	2	3	4	5	6	7	8
ANGLE(DEG.)	0-9	9-30	30-60	60-90	90-120	120-150	150-171	171-180
VIEWING ZENITH BIN NO. ANGLE(DEG.)								
1 0-15	.90 (11)	.90 (11)	.90 (11)	.90 (11)	.90 (11)	.90 (11)	.90 (11)	.90 (11)
	19.7 (11)	19.7 (11)	19.7 (11)	19.7 (11)	19.7 (11)	19.7 (11)	19.7 (11)	19.7 (11)
	-.216 (11)	-.216 (11)	-.216 (11)	-.216 (11)	-.216 (11)	-.216 (11)	-.216 (11)	-.216 (11)
2 15-27	.85 (10)	.82 (10)	.87 (10)	.88 (11)	.93 (11)	.98 (10)	1.04 (10)	1.04 (10)
	20.6 (10)	20.0 (10)	21.0 (10)	19.9 (11)	19.6 (11)	20.8 (10)	19.8 (10)	19.7 (10)
	-.033 (10)	-.305 (10)	-.226 (10)	-.144 (11)	-.286 (11)	-.304 (10)	-.277 (10)	-.110 (10)
3 27-39	.82 (9)	.85 (10)	.86 (10)	.89 (10)	.94 (10)	1.07 (10)	1.17 (10)	1.17 (9)
	19.9 (9)	21.8 (10)	21.0 (10)	21.0 (10)	20.2 (10)	21.3 (10)	20.4 (10)	21.3 (9)
	-.049 (9)	-.252 (10)	-.243 (10)	-.111 (10)	-.315 (10)	-.314 (10)	-.302 (10)	-.156 (9)
4 39-51	.88 (10)	.83 (10)	.87 (10)	.90 (10)	.95 (10)	1.11 (10)	1.27 (10)	1.33 (10)
	20.6 (10)	20.2 (10)	21.7 (10)	20.6 (10)	19.2 (10)	21.4 (10)	20.6 (10)	21.1 (10)
	-.116 (10)	-.167 (10)	-.236 (10)	-.259 (10)	-.250 (10)	-.452 (10)	-.315 (10)	-.245 (10)
5 51-63	.97 (10)	.87 (10)	.91 (10)	.86 (10)	1.02 (10)	1.13 (10)	1.35 (10)	1.39 (10)
	23.3 (10)	20.1 (10)	20.6 (10)	19.6 (10)	21.7 (10)	20.4 (10)	21.1 (10)	21.0 (10)
	-.222 (10)	-.154 (10)	-.155 (10)	-.387 (10)	-.338 (10)	-.321 (10)	-.353 (10)	-.270 (10)
6 63-75	1.06 (10)	.95 (10)	.99 (10)	.90 (10)	1.04 (10)	1.20 (10)	1.38 (11)	1.41 (10)
	24.2 (10)	20.9 (10)	21.9 (10)	18.9 (10)	21.1 (10)	19.2 (10)	20.4 (11)	20.4 (10)
	-.435 (10)	-.315 (10)	-.293 (10)	-.378 (10)	-.415 (10)	-.284 (10)	-.358 (11)	-.355 (10)
7 75-90	1.28 (9)	1.16 (10)	1.06 (10)	.85 (7)	1.04 (5)	1.23 (9)	1.39 (10)	1.42 (10)
	22.3 (9)	22.5 (10)	21.9 (10)	14.1 (7)	17.8 (5)	15.0 (9)	18.8 (10)	20.8 (10)
	-.429 (9)	-.389 (10)	-.311 (10)	-.068 (7)	-.253 (5)	-.113 (9)	-.347 (10)	-.191 (10)



(d) Solar-zenith-angle bin 4, 45.57° to 53.13°.

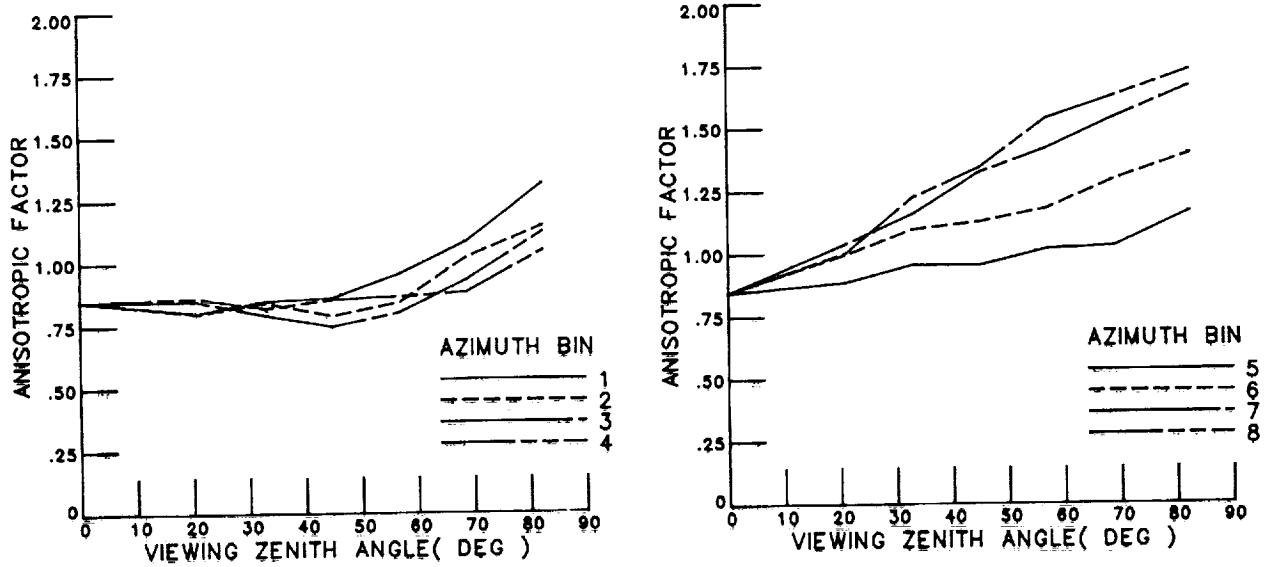
Figure 10. Continued.

SCENE TYPE : CLEAR DESERT
DATA 1 - SW ANISOTROPIC FACTOR
2 - STANDARD DEVIATION OF SW RADIANCES(W/M**2/SR)
3 - CORRELATION OF LW AND SW RADIANCES
( ) - DATA SOURCE

SUN ZENITH : 53.1 - 60.0
MEAN ALBEDO : .2471 (14)
NORMALIZED ALBEDO : 1.0431 (14)

RELATIVE AZIMUTH

VIEWING ZENITH BIN NO.	BIN NO. ANGLE(DEG.)	1 0-9	2 9-30	3 30-60	4 60-90	5 90-120	6 120-150	7 150-171	8 171-180
1	0-15	.85 (10)	.85 (10)	.85 (10)	.85 (10)	.85 (10)	.85 (10)	.85 (10)	.85 (10)
		14.4 (10)	14.4 (10)	14.4 (10)	14.4 (10)	14.4 (10)	14.4 (10)	14.4 (10)	14.4 (10)
		-.239 (10)	-.239 (10)	-.239 (10)	-.239 (10)	-.239 (10)	-.239 (10)	-.239 (10)	-.239 (10)
2	15-27	.80 (8)	.80 (8)	.85 (9)	.86 (9)	.85 (9)	1.00 (9)	1.04 (9)	1.00 (8)
		15.8 (8)	18.5 (8)	16.6 (9)	14.6 (9)	13.6 (9)	17.8 (9)	18.2 (9)	15.3 (8)
		-.174 (8)	-.508 (8)	-.089 (9)	-.135 (9)	-.176 (9)	-.373 (9)	-.310 (9)	-.095 (8)
3	27-39	.85 (7)	.84 (8)	.79 (9)	.82 (8)	.95 (8)	1.10 (8)	1.16 (8)	1.22 (7)
		21.9 (7)	13.8 (8)	13.2 (9)	12.7 (8)	13.6 (8)	16.2 (8)	17.4 (8)	20.0 (7)
		-.575 (7)	-.330 (8)	-.114 (9)	-.299 (8)	-.335 (8)	-.482 (8)	-.244 (8)	-.355 (7)
4	39-51	.86 (8)	.79 (9)	.75 (9)	.85 (10)	.95 (9)	1.13 (9)	1.32 (9)	1.34 (8)
		18.8 (8)	13.9 (9)	11.4 (9)	17.4 (10)	18.4 (9)	17.0 (9)	16.0 (9)	14.0 (8)
		.148 (8)	-.207 (9)	.053 (9)	-.181 (10)	-.264 (9)	-.352 (9)	-.376 (9)	-.229 (8)
5	51-63	.95 (8)	.84 (8)	.80 (8)	.86 (9)	1.02 (9)	1.18 (9)	1.42 (8)	1.53 (8)
		16.3 (8)	10.5 (8)	13.3 (8)	16.9 (9)	14.7 (9)	15.3 (9)	18.7 (8)	16.2 (8)
		.113 (8)	-.257 (8)	-.200 (8)	-.397 (9)	-.281 (9)	-.350 (9)	-.524 (8)	.054 (8)
6	63-75	1.08 (8)	1.02 (10)	.93 (9)	.86 (9)	1.03 (9)	1.29 (10)	1.54 (10)	1.62 (9)
		19.7 (8)	14.1 (10)	15.4 (9)	13.8 (9)	13.2 (9)	16.7 (10)	16.3 (10)	17.5 (9)
		-.541 (8)	-.495 (10)	-.250 (9)	-.445 (9)	-.441 (9)	-.257 (10)	-.107 (10)	-.185 (9)
7	75-90	1.31 (6)	1.14 (8)	1.12 (8)	1.04 (5)	1.16 (5)	1.39 (8)	1.66 (9)	1.73 (8)
		17.3 (6)	15.0 (8)	14.4 (8)	14.3 (5)	14.3 (5)	15.7 (8)	17.1 (9)	16.0 (8)
		-.600 (6)	-.659 (8)	-.466 (8)	-.472 (5)	-.476 (5)	-.524 (8)	-.273 (9)	-.067 (8)



(e) Solar-zenith-angle bin 5, 53.13° to 60.00°.

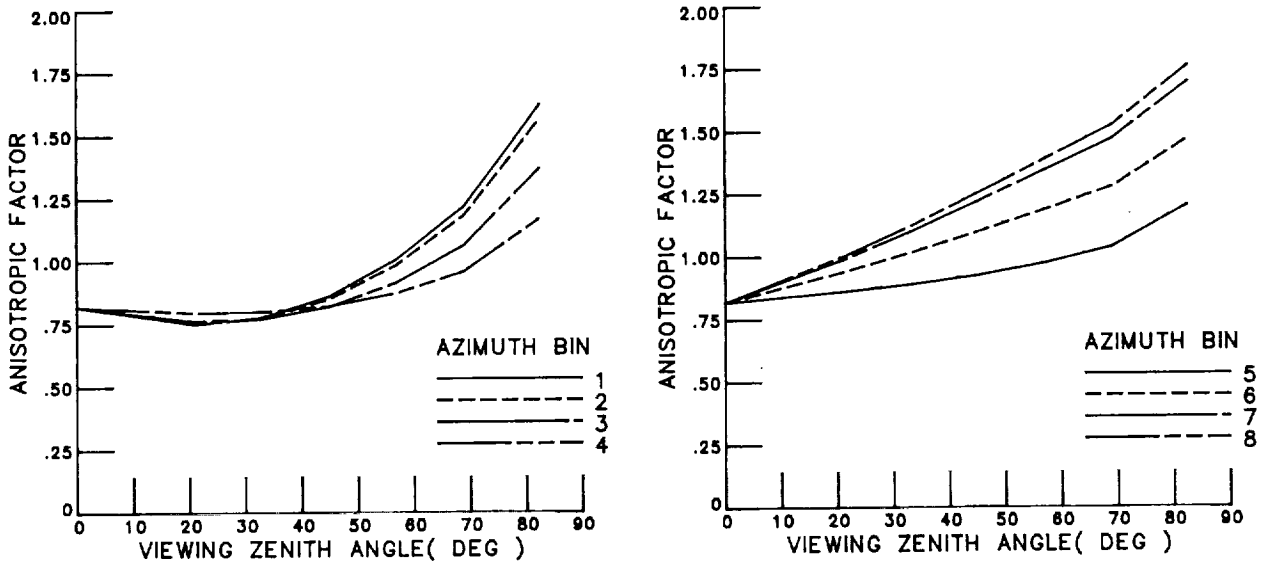
Figure 10. Continued.

SCENE TYPE : CLEAR DESERT
DATA 1 - SW ANISOTROPIC FACTOR
2 - STANDARD DEVIATION OF SW RADIANCES(W/M**2/SR)
3 - CORRELATION OF LW AND SW RADIANCES
( ) - DATA SOURCE

SUN ZENITH : 60.C - 66.4
MEAN ALBEDO : .2517 (14)
NORMALIZED ALBEDO : 1.0625 (14)

RELATIVE AZIMUTH

BIN NO. / ANGLE(DEG.)		1 0-9	2 9-30	3 30-60	4 60-90	5 90-120	6 120-150	7 150-171	8 171-180
VIEWING ZENITH BIN NO.	ANGLE(DEG.)								
1	0-15	.82 (16) 11.6 (13) .000 (0)	.82 (16) 11.6 (13) .000 (0)	.82 (16) 11.6 (13) .000 (0)	.82 (16) 11.6 (13) .000 (0)	.82 (16) 11.6 (13) .000 (0)	.82 (16) 11.6 (13) .000 (0)	.82 (16) 11.6 (13) .000 (0)	.82 (16) 11.6 (13) .000 (0)
2	15-27	.75 (16) 12.4 (13) .000 (0)	.75 (16) 14.6 (13) .000 (0)	.76 (16) 12.5 (13) .000 (0)	.80 (16) 11.3 (13) .000 (0)	.86 (16) 11.C (13) .000 (0)	.94 (16) 14.0 (13) .000 (0)	.99 (16) 14.4 (13) .000 (0)	1.00 (16) 12.7 (13) .000 (0)
3	27-39	.78 (16) 16.8 (13) .000 (0)	.78 (16) 10.6 (13) .000 (0)	.77 (16) 10.7 (13) .000 (0)	.80 (16) 10.3 (13) .000 (0)	.85 (16) 10.7 (13) .000 (0)	1.02 (16) 12.5 (13) .000 (0)	1.10 (16) 13.7 (13) .000 (0)	1.12 (16) 15.3 (13) .000 (0)
4	39-51	.86 (16) 15.8 (13) .000 (0)	.85 (16) 12.5 (13) .000 (0)	.82 (16) 10.5 (13) .000 (0)	.82 (16) 14.0 (13) .000 (0)	.92 (16) 14.5 (13) .000 (0)	1.10 (16) 13.8 (13) .000 (0)	1.22 (16) 12.3 (13) .000 (0)	1.25 (16) 10.9 (13) .000 (0)
5	51-63	1.01 (16) 14.4 (13) .000 (0)	.99 (16) 10.3 (13) .000 (0)	.92 (16) 12.7 (13) .000 (0)	.87 (16) 14.3 (13) .000 (0)	.97 (16) 11.E (13) .000 (0)	1.19 (16) 12.8 (13) .000 (0)	1.35 (16) 14.6 (13) .000 (0)	1.39 (16) 12.3 (13) .000 (0)
6	63-75	1.22 (16) 18.4 (13) .000 (0)	1.18 (16) 13.6 (13) .000 (0)	1.06 (16) 14.7 (13) .000 (0)	.96 (16) 12.6 (13) .000 (0)	1.04 (16) 11.1 (13) .000 (0)	1.28 (16) 13.8 (13) .000 (0)	1.47 (16) 13.0 (13) .000 (0)	1.53 (16) 13.7 (13) .000 (0)
7	75-90	1.62 (16) 17.8 (13) .000 (0)	1.56 (16) 17.1 (13) .000 (0)	1.37 (16) 14.7 (13) .000 (0)	1.17 (16) 13.4 (13) .000 (0)	1.21 (16) 12.3 (13) .000 (0)	1.47 (16) 13.9 (13) .000 (0)	1.70 (16) 14.5 (13) .000 (0)	1.76 (16) 13.6 (13) .000 (0)



(f) Solar-zenith-angle bin 6, 60.00° to 66.42°.

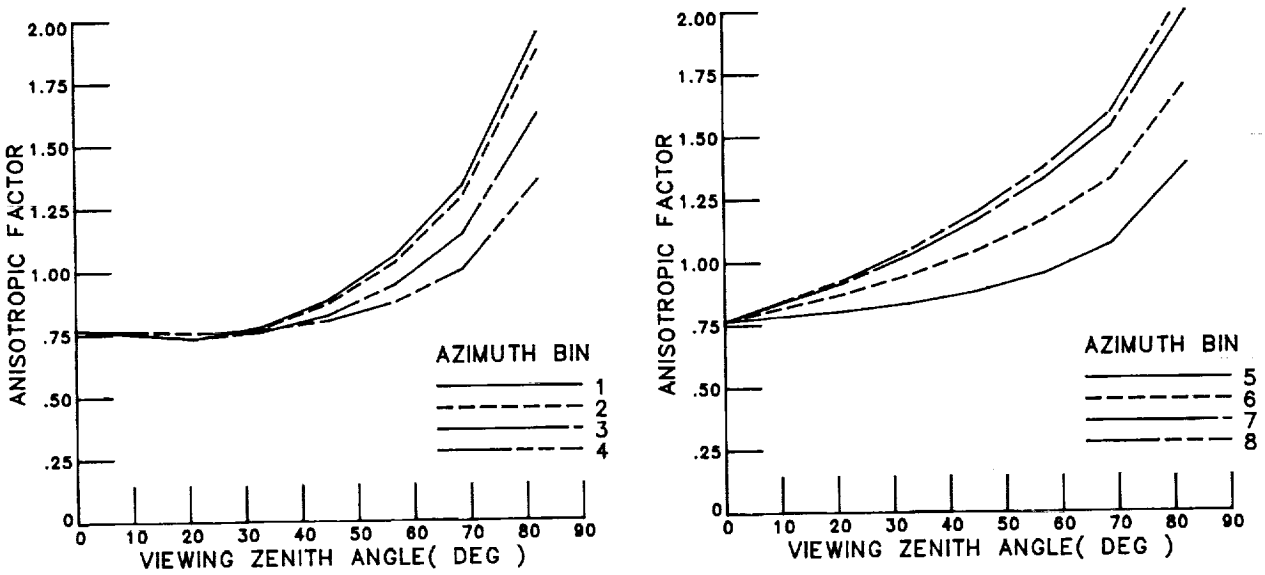
Figure 10. Continued.

SCENE TYPE : CLEAR DESERT
DATA 1 - SW ANISOTROPIC FACTOR
2 - STANDARD DEVIATION OF SW RADIANCES(W/M**2/SR)
3 - CORRELATION OF LW AND SW RADIANCES
( ) - DATA SOURCE

SUN ZENITH : 66.4 - 72.5
MEAN ALBEDO : .2581 (14)
NORMALIZED ALBEDO : 1.0695 (14)

RELATIVE AZIMUTH

BIN NO. / ANGLE(DEG.)		1 0-9	2 9-30	3 30-60	4 60-90	5 90-120	6 120-150	7 150-171	8 171-180
VIEWING ZENITH BIN NO.	ANGLE(DEG.)								
1	0-15	.77 (16) 8.7 (13) .000 (0)	.77 (16) 8.7 (13) .000 (0)	.77 (16) 8.7 (13) .000 (0)	.77 (16) 8.7 (13) .000 (0)	.77 (16) 8.7 (13) .000 (0)	.77 (16) 8.7 (13) .000 (0)	.77 (16) 8.7 (13) .000 (0)	.77 (16) 8.7 (13) .000 (0)
2	15-27	.73 (16) 9.6 (13) .000 (0)	.73 (16) 11.2 (13) .000 (0)	.73 (16) 9.6 (13) .000 (0)	.75 (16) 8.5 (13) .000 (0)	.80 (16) 8.2 (13) .000 (0)	.87 (16) 10.3 (13) .000 (0)	.92 (16) 10.7 (13) .000 (0)	.93 (16) 9.4 (13) .000 (0)
3	27-39	.78 (16) 13.3 (13) .000 (0)	.77 (16) 8.4 (13) .000 (0)	.75 (16) 8.4 (13) .000 (0)	.76 (16) 7.9 (13) .000 (0)	.83 (16) 8.0 (13) .000 (0)	.95 (16) 9.3 (13) .000 (0)	1.03 (16) 10.2 (13) .000 (0)	1.05 (16) 11.4 (13) .000 (0)
4	39-51	.88 (16) 12.8 (13) .000 (0)	.87 (16) 10.1 (13) .000 (0)	.82 (16) 8.4 (13) .000 (0)	.80 (16) 10.6 (13) .000 (0)	.88 (16) 11.2 (13) .000 (0)	1.04 (16) 10.4 (13) .000 (0)	1.16 (16) 9.3 (13) .000 (0)	1.19 (16) 8.3 (13) .000 (0)
5	51-63	1.06 (16) 12.0 (13) .000 (0)	1.03 (16) 8.6 (13) .000 (0)	.94 (16) 10.4 (13) .000 (0)	.87 (16) 11.3 (13) .000 (0)	.95 (16) 9.2 (13) .000 (0)	1.16 (16) 10.0 (13) .000 (0)	1.32 (16) 11.6 (13) .000 (0)	1.37 (16) 9.6 (13) .000 (0)
6	63-75	1.33 (16) 16.1 (13) .000 (0)	1.29 (16) 11.8 (13) .000 (0)	1.14 (16) 12.6 (13) .000 (0)	1.00 (16) 10.5 (13) .000 (0)	1.07 (16) 9.1 (13) .000 (0)	1.32 (16) 11.4 (13) .000 (0)	1.53 (16) 10.8 (13) .000 (0)	1.59 (16) 11.4 (13) .000 (0)
7	75-90	1.94 (16) 17.0 (13) .000 (0)	1.87 (16) 16.3 (13) .000 (0)	1.62 (16) 13.9 (13) .000 (0)	1.35 (16) 12.3 (13) .000 (0)	1.36 (16) 11.3 (13) .000 (0)	1.71 (16) 12.9 (13) .000 (0)	1.99 (16) 13.6 (13) .000 (0)	2.07 (16) 12.8 (13) .000 (0)



(g) Solar-zenith-angle bin 7, 66.42° to 72.54°.

Figure 10. Continued.

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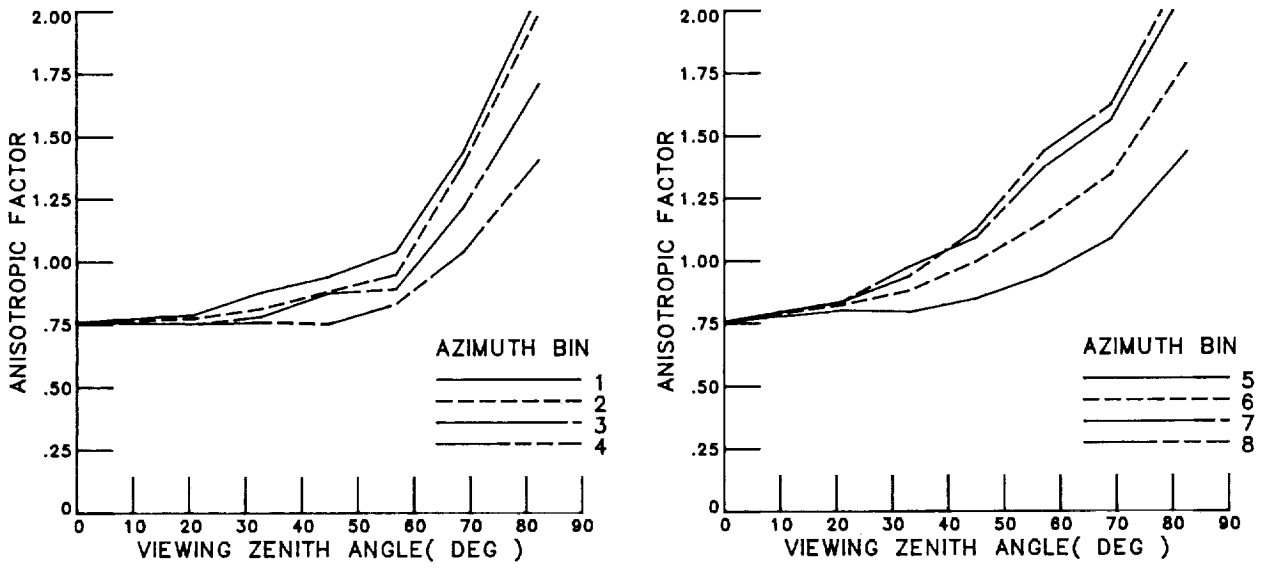
SCENE TYPE : CLEAR DESERT
DATA 1 - SW ANISOTROPIC FACTOR
2 - STANDARD DEVIATION OF SW RADIANCES(W/M**2/SR)
3 - CORRELATION OF LW AND SW RADIANCES
( ) - DATA SOURCE

SUN ZENITH : 72.5 - 78.5
MEAN ALBEDO : .2683 (14)
NORMALIZED ALBEDO : 1.1325 (14)

RELATIVE AZIMUTH

VIEWING ZENITH BIN NO.	VIEWING ZENITH ANGLE(DEG.)	BIN NO. / ANGLE(DEG.) 1 0-9	2 9-30	3 30-60	4 60-90	5 90-120	6 120-150	7 150-171	8 171-180
1	0-15	.76 (12)	.76 (12)	.76 (12)	.76 (12)	.76 (12)	.76 (12)	.76 (12)	.76 (12)
		6.4 (13)	6.4 (13)	6.4 (13)	6.4 (13)	6.4 (13)	6.4 (13)	6.4 (13)	6.4 (13)
		.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)
2	15-27	.79 (12)	.77 (12)	.75 (12)	.75 (12)	.80 (12)	.82 (12)	.84 (12)	.84 (12)
		7.7 (13)	8.9 (13)	7.3 (13)	6.3 (13)	6.1 (13)	7.3 (13)	7.2 (13)	6.3 (13)
		.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)
3	27-39	.88 (12)	.81 (12)	.78 (12)	.76 (12)	.79 (12)	.88 (12)	.98 (12)	.94 (12)
		11.2 (13)	6.6 (13)	6.4 (13)	5.8 (13)	5.7 (13)	6.4 (13)	7.2 (13)	7.6 (13)
		.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)
4	39-51	.94 (12)	.88 (12)	.87 (12)	.75 (12)	.85 (12)	1.00 (12)	1.09 (12)	1.13 (12)
		10.2 (13)	7.7 (13)	6.6 (13)	7.6 (13)	8.1 (13)	7.4 (13)	6.5 (13)	5.8 (13)
		.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)
5	51-63	1.04 (12)	.95 (12)	.89 (12)	.83 (12)	.94 (12)	1.16 (12)	1.37 (12)	1.44 (12)
		8.8 (13)	5.9 (13)	7.3 (13)	8.0 (13)	6.7 (13)	7.4 (13)	9.0 (13)	7.5 (13)
		.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)
6	63-75	1.44 (12)	1.39 (12)	1.22 (12)	1.04 (12)	1.05 (12)	1.35 (12)	1.56 (12)	1.62 (12)
		12.9 (13)	9.5 (13)	10.0 (13)	8.1 (13)	6.9 (13)	8.6 (13)	8.2 (13)	8.7 (13)
		.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)
7	75-90	2.07 (12)	1.99 (12)	1.71 (12)	1.41 (12)	1.44 (12)	1.79 (12)	2.10 (12)	2.19 (12)
		13.5 (13)	12.9 (13)	10.9 (13)	9.5 (13)	8.7 (13)	10.0 (13)	10.6 (13)	10.0 (13)
		.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)



(h) Solar-zenith-angle bin 8, 72.54° to 78.46°.

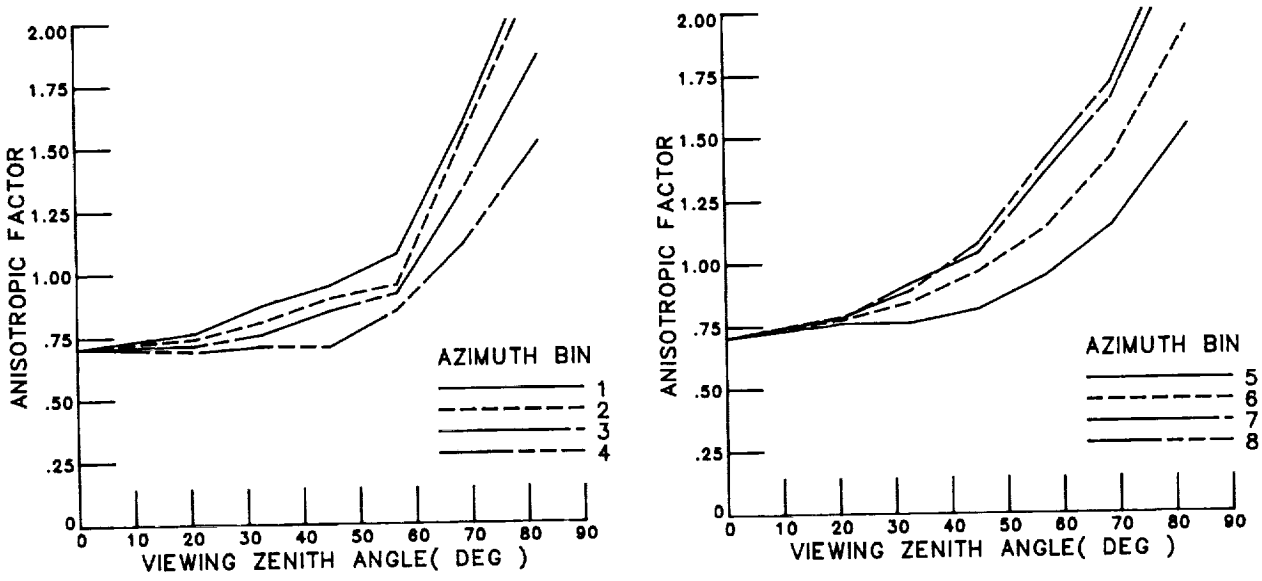
Figure 10. Continued.

SCENE TYPE : CLEAR DESERT
DATA 1 - SW ANISOTROPIC FACTOR
2 - STANDARD DEVIATION OF SW RADIANCES(W/M**2/SR)
3 - CORRELATION OF LW AND SW RADIANCES
( ) - DATA SOURCE

SUN ZENITH : 78.5 - 84.3
MEAN ALBEDO : .2E64 (14)
NORMALIZED ALBEDO : 1.2C89 (14)

RELATIVE AZIMUTH

BIN NO. / ANGLE(DEG.)		1 0-9	2 9-30	3 30-60	4 60-90	5 90-120	6 120-150	7 150-171	8 171-180
VIEWING ZENITH BIN NO.	ANGLE(DEG.)								
1	0-15	.70 (12)	.70 (12)	.70 (12)	.70 (12)	.7C (12)	.70 (12)	.70 (12)	.70 (12)
		3.8 (13)	3.8 (13)	3.8 (13)	3.6 (13)	3.E (13)	3.8 (13)	3.8 (13)	3.8 (13)
		.000 (0)	.000 (0)	.000 (0)	.000 (0)	.00C (0)	.000 (0)	.000 (0)	.000 (0)
2	15-27	.76 (12)	.74 (12)	.71 (12)	.69 (12)	.7E (12)	.78 (12)	.78 (12)	.79 (12)
		4.6 (13)	5.4 (13)	4.4 (13)	3.7 (13)	3.7 (13)	4.4 (13)	4.3 (13)	3.8 (13)
		.000 (0)	.000 (0)	.000 (0)	.000 (0)	.00C (0)	.000 (0)	.000 (0)	.000 (0)
3	27-39	.87 (12)	.81 (12)	.76 (12)	.71 (12)	.7E (12)	.84 (12)	.92 (12)	.89 (12)
		7.1 (13)	4.2 (13)	4.0 (13)	3.5 (13)	3.5 (13)	3.9 (13)	4.4 (13)	4.6 (13)
		.000 (0)	.000 (0)	.000 (0)	.000 (0)	.00C (0)	.000 (0)	.000 (0)	.000 (0)
4	39-51	.95 (12)	.90 (12)	.85 (12)	.71 (12)	.81 (12)	.96 (12)	1.04 (12)	1.08 (12)
		6.6 (13)	5.0 (13)	4.1 (13)	4.5 (13)	5.C (13)	4.6 (13)	4.0 (13)	3.6 (13)
		.000 (0)	.000 (0)	.000 (0)	.000 (0)	.00C (0)	.000 (0)	.000 (0)	.000 (0)
5	51-63	1.07 (12)	.95 (12)	.92 (12)	.85 (12)	.94 (12)	1.13 (12)	1.35 (12)	1.40 (12)
		5.6 (13)	3.8 (13)	4.6 (13)	5.3 (13)	4.3 (13)	4.6 (13)	5.6 (13)	4.7 (13)
		.000 (0)	.000 (0)	.000 (0)	.000 (0)	.00C (0)	.000 (0)	.000 (0)	.000 (0)
6	63-75	1.59 (12)	1.53 (12)	1.33 (12)	1.11 (12)	1.1E (12)	1.42 (12)	1.65 (12)	1.71 (12)
		9.1 (13)	6.7 (13)	7.0 (13)	5.5 (13)	4.7 (13)	5.8 (13)	5.5 (13)	5.9 (13)
		.000 (0)	.000 (0)	.000 (0)	.000 (0)	.00C (0)	.000 (0)	.000 (0)	.000 (0)
7	75-90	2.27 (12)	2.18 (12)	1.86 (12)	1.51 (12)	1.54 (12)	1.93 (12)	2.28 (12)	2.37 (12)
		9.5 (13)	9.0 (13)	7.6 (13)	6.6 (13)	6.C (13)	6.9 (13)	7.4 (13)	7.0 (13)
		.000 (0)	.000 (0)	.000 (0)	.000 (0)	.00C (0)	.000 (0)	.000 (0)	.000 (0)



(i) Solar-zenith-angle bin 9, 78.46° to 84.26°.

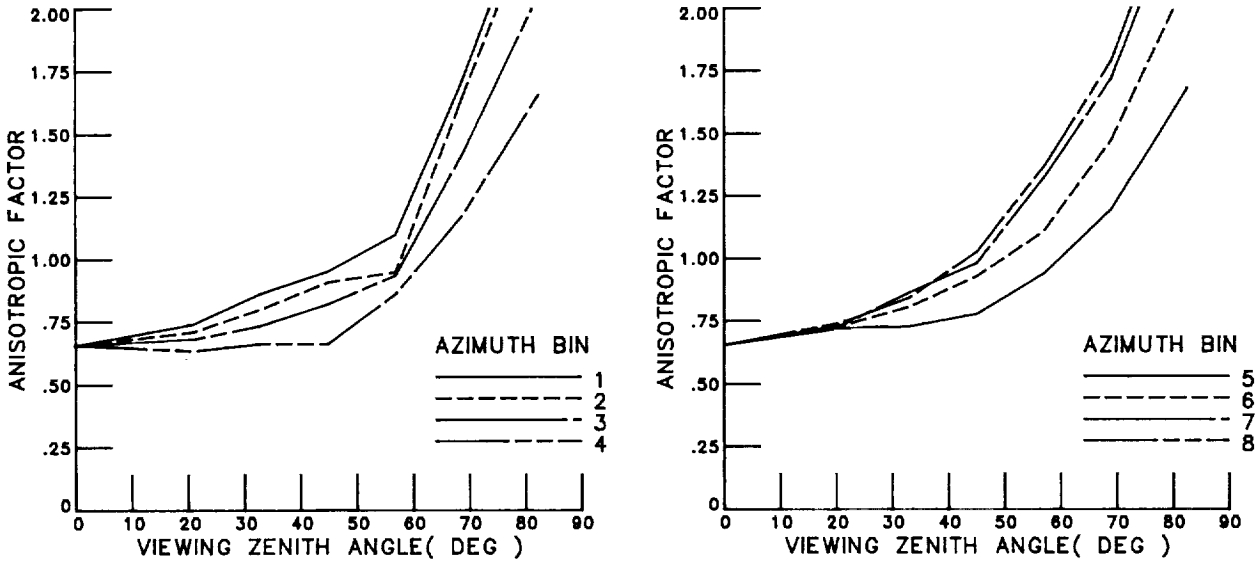
Figure 10. Continued.

SCENE TYPE : CLEAR DESERT
DATA 1 - SW ANISOTROPIC FACTOR
2 - STANDARD DEVIATION OF SW RADIANCES(W/M**2/SR)
3 - CORRELATION OF LW AND SW RADIANCES
( ) - DATA SOURCE

SUN ZENITH : 84.3 - 90.0
MEAN ALBEDO : .3098 (14)
NORMALIZED ALBEDO : 1.3077 (14)

RELATIVE AZIMUTH

BIN NO. / ANGLE(DEG.)		1 0-9	2 9-30	3 30-60	4 60-90	5 90-120	6 120-150	7 150-171	8 171-180
VIEWING ZENITH BIN NO.	ANGLE(DEG.)								
1	0-15	.65 (12)	.65 (12)	.65 (12)	.65 (12)	.65 (12)	.65 (12)	.65 (12)	.65 (12)
		1.3 (13)	1.3 (13)	1.3 (13)	1.3 (13)	1.3 (13)	1.3 (13)	1.3 (13)	1.3 (13)
		.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)
2	15-27	.74 (12)	.71 (12)	.68 (12)	.63 (12)	.72 (12)	.73 (12)	.73 (12)	.74 (12)
		1.7 (13)	1.9 (13)	1.5 (13)	1.2 (13)	1.3 (13)	1.5 (13)	1.5 (13)	1.3 (13)
		.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)
3	27-39	.86 (12)	.80 (12)	.73 (12)	.66 (12)	.73 (12)	.81 (12)	.86 (12)	.84 (12)
		2.5 (13)	1.5 (13)	1.4 (13)	1.2 (13)	1.2 (13)	1.4 (13)	1.5 (13)	1.6 (13)
		.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)
4	39-51	.95 (12)	.91 (12)	.82 (12)	.66 (12)	.78 (12)	.93 (12)	.98 (12)	1.03 (12)
		2.4 (13)	1.8 (13)	1.4 (13)	1.5 (13)	1.7 (13)	1.6 (13)	1.3 (13)	1.2 (13)
		.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)
5	51-63	1.10 (12)	.95 (12)	.93 (12)	.86 (12)	.94 (12)	1.11 (12)	1.32 (12)	1.37 (12)
		2.1 (13)	1.4 (13)	1.6 (13)	1.9 (13)	1.5 (13)	1.6 (13)	2.0 (13)	1.6 (13)
		.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)
6	63-75	1.72 (12)	1.65 (12)	1.42 (12)	1.18 (12)	1.19 (12)	1.47 (12)	1.72 (12)	1.79 (12)
		3.6 (13)	2.6 (13)	2.7 (13)	2.1 (13)	1.8 (13)	2.2 (13)	2.1 (13)	2.2 (13)
		.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)
7	75-90	2.51 (12)	2.41 (12)	2.05 (12)	1.66 (12)	1.68 (12)	2.11 (12)	2.49 (12)	2.60 (12)
		3.8 (13)	3.6 (13)	3.0 (13)	2.6 (13)	2.3 (13)	2.7 (13)	2.9 (13)	2.7 (13)
		.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)



(j) Solar-zenith-angle bin 10, 84.26° to 90.00°.

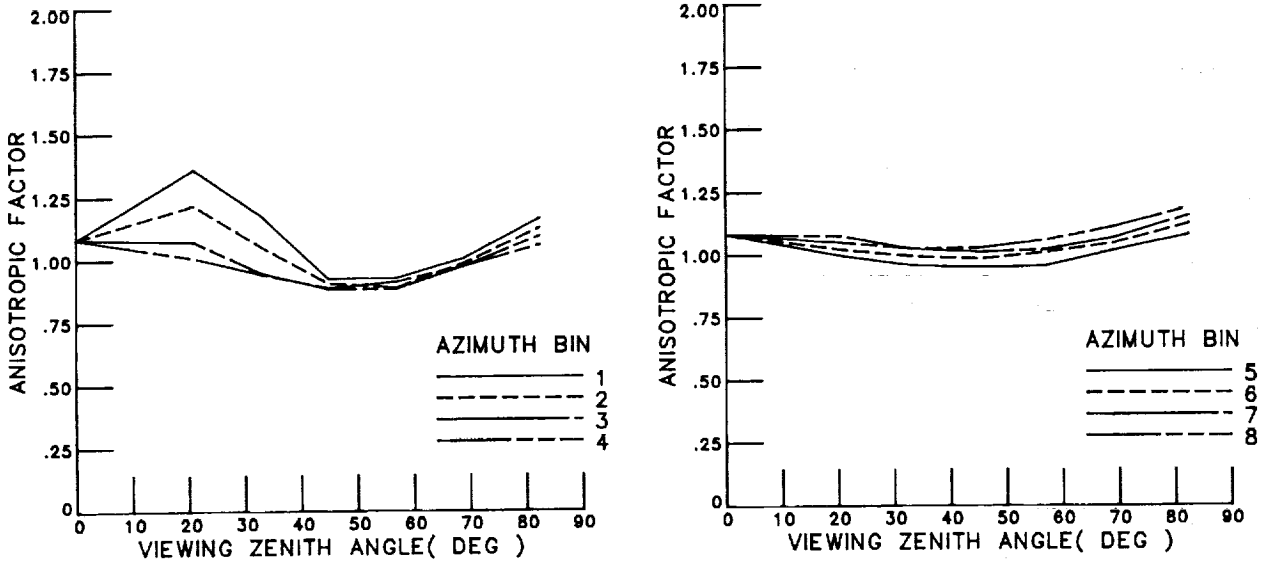
Figure 10. Concluded.

SCENE TYPE : LAND-OCEAN MIX
DATA 1 - SW ANISOTROPIC FACTOR
2 - STANDARD DEVIATION OF SW RADIANCES(W/M**2/SR)
3 - CORRELATION OF LW AND SW RADIANCES
( ) - DATA SOURCE

SUN ZENITH : .C - 25.8
MEAN ALBEDO : .1180 (19)
NORMALIZED ALBEDO : 1.0000 (19)

RELATIVE AZIMUTH

VIEWING ZENITH BIN NO.	BIN NO. / ANGLE(DEG.)	1 0-9	2 9-30	3 30-60	4 60-90	5 90-120	6 120-150	7 150-171	8 171-180
1	0-15	1.08 (2)	1.08 (2)	1.08 (2)	1.08 (2)	1.08 (2)	1.08 (2)	1.08 (2)	1.08 (2)
		23.7 (2)	23.7 (2)	23.7 (2)	23.7 (2)	23.7 (2)	23.7 (2)	23.7 (2)	23.7 (2)
		.643 (2)	.643 (2)	.643 (2)	.643 (2)	.643 (2)	.643 (2)	.643 (2)	.643 (2)
2	15-27	1.36 (2)	1.22 (2)	1.07 (2)	1.01 (2)	1.00 (2)	1.02 (2)	1.05 (2)	1.07 (2)
		26.9 (2)	19.0 (2)	18.7 (2)	22.1 (2)	24.1 (2)	25.5 (2)	26.7 (2)	27.8 (2)
		.070 (2)	.248 (2)	.591 (2)	.661 (2)	.671 (2)	.685 (2)	.684 (2)	.665 (2)
3	27-39	1.18 (2)	1.05 (2)	.95 (2)	.94 (2)	.96 (2)	.99 (2)	1.02 (2)	1.02 (2)
		19.2 (2)	16.1 (2)	20.3 (2)	22.9 (2)	24.1 (2)	24.7 (2)	26.1 (2)	25.5 (2)
		.195 (2)	.491 (2)	.635 (2)	.663 (2)	.662 (2)	.672 (2)	.653 (2)	.657 (2)
4	39-51	.92 (2)	.90 (2)	.88 (2)	.89 (2)	.95 (2)	.98 (2)	1.01 (2)	1.03 (2)
		17.6 (2)	19.0 (2)	20.6 (2)	21.9 (2)	23.8 (2)	24.1 (2)	24.3 (2)	24.1 (2)
		.564 (2)	.617 (2)	.650 (2)	.644 (2)	.632 (2)	.639 (2)	.650 (2)	.650 (2)
5	51-63	.93 (2)	.89 (2)	.88 (2)	.91 (2)	.95 (2)	1.01 (2)	1.02 (2)	1.06 (2)
		19.7 (2)	19.1 (2)	19.6 (2)	21.7 (2)	22.5 (2)	23.9 (2)	22.1 (2)	22.9 (2)
		.571 (2)	.574 (2)	.599 (2)	.617 (2)	.601 (2)	.609 (2)	.624 (2)	.615 (2)
6	63-75	1.00 (2)	.98 (2)	.97 (2)	.97 (2)	1.02 (2)	1.04 (2)	1.07 (2)	1.11 (2)
		16.3 (2)	17.3 (2)	17.7 (2)	18.3 (2)	19.8 (2)	20.7 (2)	19.1 (2)	19.3 (2)
		.416 (2)	.438 (2)	.488 (2)	.517 (2)	.459 (2)	.482 (2)	.555 (2)	.529 (2)
7	75-90	1.16 (2)	1.13 (2)	1.09 (2)	1.06 (2)	1.08 (2)	1.12 (2)	1.16 (2)	1.19 (2)
		18.3 (2)	16.2 (2)	15.2 (2)	15.6 (2)	16.3 (2)	17.6 (2)	16.6 (2)	16.9 (2)
		.362 (2)	.236 (2)	.379 (2)	.401 (2)	.311 (2)	.381 (2)	.453 (2)	.436 (2)



(a) Solar-zenith-angle bin 1, 0° to 25.84°.

Figure 11. Bidirectional model for clear-over-land-ocean mix. (See table 5 for explanation of data sources.)

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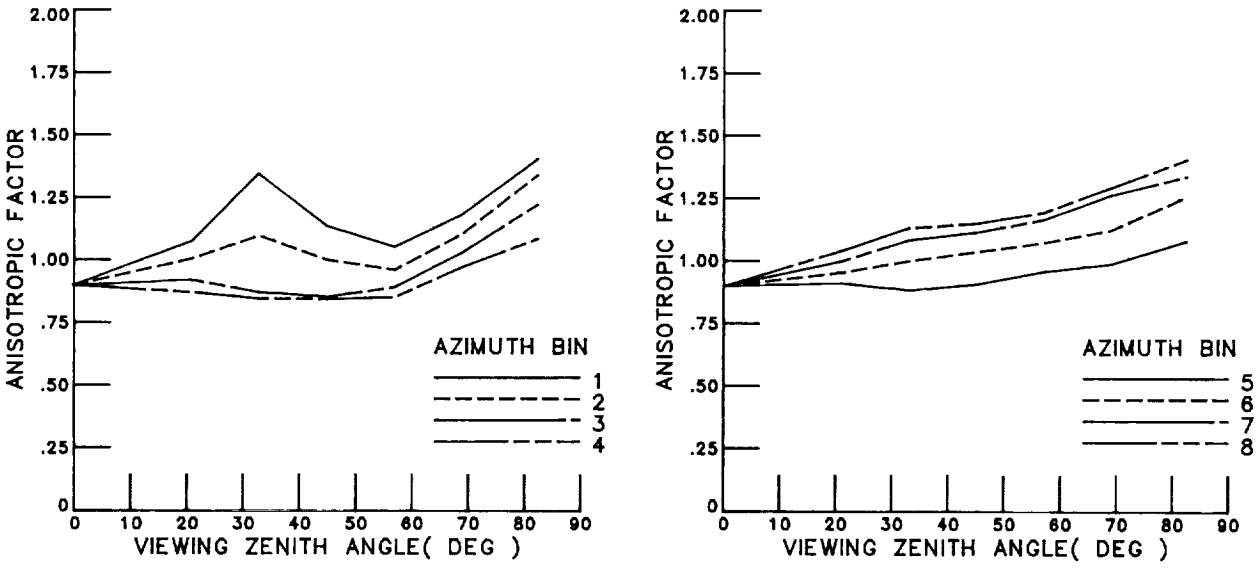
SCENE TYPE : LAND-OCEAN MIX
DATA 1 - SW ANISOTROPIC FACTOR
2 - STANDARD DEVIATION OF SW RADIANCES(W/M**2/SR)
3 - CORRELATION OF LW AND SW RADIANCES
( ) - DATA SOURCE

SUN ZENITH : 25.8 - 36.9
MEAN ALBEDO : .1193 (19)
NORMALIZED ALBEDO : 1.0106 (19)

RELATIVE AZIMUTH

BIN NO. / ANGLE(DEG.)		1 0-9	2 9-30	3 30-60	4 60-90	5 90-120	6 120-150	7 150-171	8 171-180
VIEWING ZENITH BIN NO.	ANGLE(DEG.)								
1	0-15	.90 (2)	.90 (2)	.90 (2)	.90 (2)	.90 (2)	.90 (2)	.90 (2)	.90 (2)
		18.5 (2)	18.5 (2)	18.5 (2)	18.5 (2)	18.5 (2)	18.5 (2)	18.5 (2)	18.5 (2)
		.662 (2)	.662 (2)	.662 (2)	.662 (2)	.662 (2)	.662 (2)	.662 (2)	.662 (2)
2	15-27	1.08 (2)	1.00 (2)	.92 (2)	.87 (2)	.91 (2)	.95 (2)	1.00 (2)	1.04 (2)
		15.7 (2)	12.7 (2)	16.2 (2)	18.6 (2)	20.3 (2)	21.6 (2)	23.1 (2)	24.1 (2)
		.218 (2)	.358 (2)	.602 (2)	.654 (2)	.669 (2)	.678 (2)	.678 (2)	.683 (2)
3	27-39	1.35 (2)	1.10 (2)	.87 (2)	.84 (2)	.88 (2)	1.00 (2)	1.08 (2)	1.13 (2)
		26.9 (2)	13.7 (2)	15.6 (2)	18.5 (2)	19.2 (2)	22.5 (2)	24.8 (2)	25.4 (2)
		-.134 (2)	.058 (2)	.604 (2)	.675 (2)	.653 (2)	.647 (2)	.658 (2)	.665 (2)
4	39-51	1.14 (2)	1.00 (2)	.85 (2)	.84 (2)	.91 (2)	1.04 (2)	1.11 (2)	1.15 (2)
		15.4 (2)	13.6 (2)	17.2 (2)	19.5 (2)	19.1 (2)	22.5 (2)	23.0 (2)	24.3 (2)
		.018 (2)	.371 (2)	.565 (2)	.634 (2)	.663 (2)	.632 (2)	.673 (2)	.649 (2)
5	51-63	1.05 (2)	.96 (2)	.89 (2)	.85 (2)	.98 (2)	1.07 (2)	1.17 (2)	1.19 (2)
		14.2 (2)	14.0 (2)	16.7 (2)	17.8 (2)	18.5 (2)	20.6 (2)	21.5 (2)	22.1 (2)
		.310 (2)	.444 (2)	.546 (2)	.601 (2)	.651 (2)	.640 (2)	.638 (2)	.644 (2)
6	63-75	1.18 (2)	1.11 (2)	1.03 (2)	.97 (2)	.95 (2)	1.12 (2)	1.26 (2)	1.29 (2)
		15.4 (2)	15.5 (2)	16.1 (2)	16.3 (2)	17.5 (2)	18.6 (2)	19.1 (2)	19.5 (2)
		.184 (2)	.300 (2)	.446 (2)	.447 (2)	.672 (2)	.610 (2)	.544 (2)	.520 (2)
7	75-90	1.41 (2)	1.34 (2)	1.22 (2)	1.09 (2)	1.08 (2)	1.26 (2)	1.34 (2)	1.41 (2)
		15.4 (2)	16.8 (2)	15.3 (2)	13.6 (2)	16.4 (2)	16.3 (2)	16.1 (2)	17.8 (2)
		.143 (2)	.113 (2)	.261 (2)	.476 (2)	.591 (2)	.543 (2)	.467 (2)	.474 (2)



(b) Solar-zenith-angle bin 2, 25.84° to 36.87°.

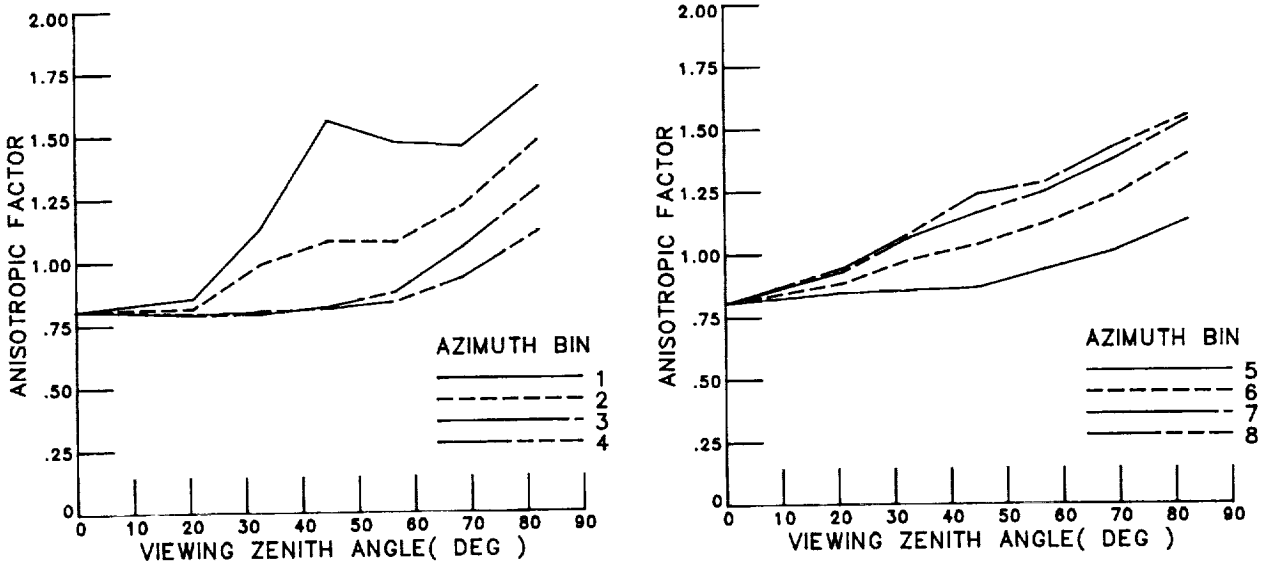
Figure 11. Continued.

SCENE TYPE : LAND-OCEAN MIX
DATA 1 - SW ANISOTROPIC FACTOR
2 - STANDARD DEVIATION OF SW RADIANCES(W/M**2/SR)
3 - CORRELATION OF LW AND SW RADIANCES
( ) - DATA SOURCE

SUN ZENITH : 36.5 - 45.6
MEAN ALBEDO : .1270 (19)
NORMALIZED ALBEDO : 1.0763 (19)

RELATIVE AZIMUTH

VIEWING ZENITH BIN NO.	VIEWING ZENITH ANGLE(DEG.)	BIN NO. / ANGLE(DEG.) 1 0-9	2 9-30	3 30-60	4 60-90	5 90-120	6 120-150	7 150-171	8 171-180
1	0-15	.81 (2)	.81 (2)	.81 (2)	.81 (2)	.81 (2)	.81 (2)	.81 (2)	.81 (2)
		17.2 (2)	17.2 (2)	17.2 (2)	17.2 (2)	17.2 (2)	17.2 (2)	17.2 (2)	17.2 (2)
		.649 (2)	.649 (2)	.649 (2)	.649 (2)	.649 (2)	.649 (2)	.649 (2)	.649 (2)
2	15-27	.66 (2)	.82 (2)	.79 (2)	.79 (2)	.85 (2)	.89 (2)	.93 (2)	.95 (2)
		13.8 (2)	12.0 (2)	15.4 (2)	17.7 (2)	18.4 (2)	18.5 (2)	18.7 (2)	19.8 (2)
		.512 (2)	.531 (2)	.591 (2)	.636 (2)	.636 (2)	.654 (2)	.679 (2)	.670 (2)
3	27-39	1.13 (2)	.99 (2)	.79 (2)	.80 (2)	.86 (2)	.98 (2)	1.07 (2)	1.08 (2)
		16.5 (2)	12.2 (2)	14.2 (2)	18.6 (2)	18.4 (2)	20.1 (2)	21.7 (2)	22.4 (2)
		-.233 (2)	.137 (2)	.605 (2)	.607 (2)	.641 (2)	.649 (2)	.648 (2)	.676 (2)
4	39-51	1.56 (2)	1.08 (2)	.82 (2)	.81 (2)	.87 (2)	1.04 (2)	1.16 (2)	1.24 (2)
		33.6 (2)	15.4 (2)	15.6 (2)	17.5 (2)	17.1 (2)	19.5 (2)	21.9 (2)	23.7 (2)
		-.356 (2)	.040 (2)	.535 (2)	.593 (2)	.651 (2)	.622 (2)	.663 (2)	.659 (2)
5	51-63	1.47 (2)	1.07 (2)	.86 (2)	.84 (2)	.94 (2)	1.12 (2)	1.25 (2)	1.28 (2)
		23.0 (2)	14.3 (2)	15.5 (2)	15.5 (2)	17.3 (2)	20.4 (2)	21.1 (2)	21.8 (2)
		-.410 (2)	.100 (2)	.510 (2)	.594 (2)	.636 (2)	.588 (2)	.652 (2)	.622 (2)
6	63-75	1.46 (2)	1.22 (2)	1.06 (2)	.93 (2)	1.01 (2)	1.23 (2)	1.37 (2)	1.42 (2)
		15.8 (2)	14.5 (2)	14.3 (2)	15.4 (2)	16.8 (2)	18.5 (2)	18.5 (2)	19.4 (2)
		-.251 (2)	.062 (2)	.327 (2)	.509 (2)	.590 (2)	.493 (2)	.570 (2)	.552 (2)
7	75-90	1.69 (2)	1.48 (2)	1.29 (2)	1.12 (2)	1.13 (2)	1.40 (2)	1.53 (2)	1.55 (2)
		17.6 (2)	13.5 (2)	14.4 (2)	10.3 (2)	14.6 (2)	15.0 (2)	15.6 (2)	15.9 (2)
		-.283 (2)	-.085 (2)	.233 (2)	.332 (2)	.505 (2)	.470 (2)	.417 (2)	.477 (2)



(c) Solar-zenith-angle bin 3, 36.87° to 45.57°.

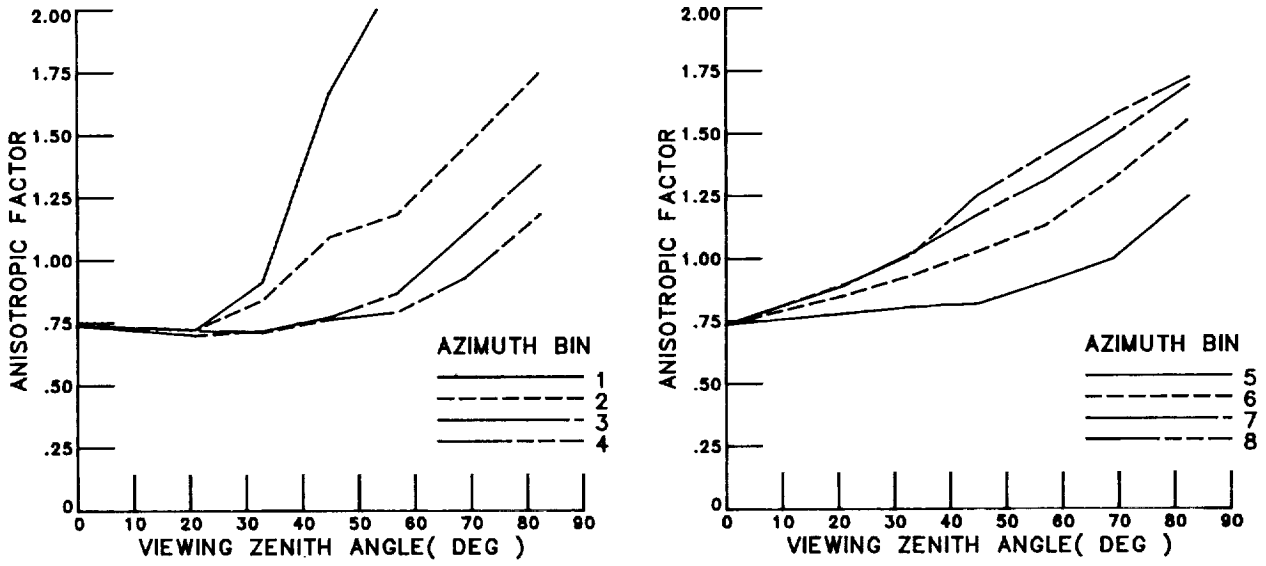
Figure 11. Continued.

SCENE TYPE : LAND-OCEAN MIX
DATA 1 - SW ANISOTROPIC FACTOR
2 - STANDARD DEVIATION OF SW RADIANCES(W/M**2/SR)
3 - CORRELATION OF LW AND SW RADIANCES
( ) - DATA SOURCE

SUN ZENITH : 45.6 - 53.1
MEAN ALBEDO : .1340 (19)
NORMALIZED ALBEDO : 1.1356 (19)

RELATIVE AZIMUTH

VIEWING ZENITH BIN NO.	VIEWING ZENITH ANGLE(DEG.)	1 0-9	2 9-30	3 30-60	4 60-90	5 90-120	6 120-150	7 150-171	8 171-180
1	0-15	.74 (2)	.74 (2)	.74 (2)	.74 (2)	.74 (2)	.74 (2)	.74 (2)	.74 (2)
		12.9 (2)	12.9 (2)	12.9 (2)	12.9 (2)	12.9 (2)	12.9 (2)	12.9 (2)	12.9 (2)
		.651 (2)	.651 (2)	.651 (2)	.651 (2)	.651 (2)	.651 (2)	.651 (2)	.651 (2)
2	15-27	.72 (2)	.72 (2)	.70 (2)	.72 (2)	.78 (2)	.85 (2)	.89 (2)	.89 (2)
		10.0 (2)	9.2 (2)	10.9 (2)	12.4 (2)	13.7 (2)	14.6 (2)	15.1 (2)	15.7 (2)
		.604 (2)	.567 (2)	.651 (2)	.620 (2)	.626 (2)	.596 (2)	.635 (2)	.641 (2)
3	27-39	.91 (2)	.84 (2)	.72 (2)	.71 (2)	.81 (2)	.93 (2)	1.02 (2)	1.01 (2)
		7.2 (2)	8.2 (2)	10.5 (2)	11.8 (2)	14.1 (2)	15.3 (2)	17.1 (2)	16.3 (2)
		.095 (2)	.317 (2)	.596 (2)	.666 (2)	.651 (2)	.628 (2)	.634 (2)	.669 (2)
4	39-51	1.07 (2)	1.09 (2)	.77 (2)	.76 (2)	.82 (2)	1.03 (2)	1.17 (2)	1.25 (2)
		30.8 (2)	13.6 (2)	10.2 (2)	11.9 (2)	12.9 (2)	16.3 (2)	18.9 (2)	20.7 (2)
		-.487 (2)	-.127 (2)	.548 (2)	.640 (2)	.673 (2)	.623 (2)	.640 (2)	.637 (2)
5	51-63	2.14 (2)	1.18 (2)	.87 (2)	.79 (2)	.90 (2)	1.13 (2)	1.31 (2)	1.41 (2)
		47.5 (2)	16.1 (2)	11.3 (2)	11.4 (2)	13.6 (2)	16.3 (2)	19.0 (2)	21.5 (2)
		-.498 (2)	-.224 (2)	.479 (2)	.613 (2)	.652 (2)	.572 (2)	.626 (2)	.626 (2)
6	63-75	2.10 (2)	1.45 (2)	1.11 (2)	.93 (2)	1.00 (2)	1.32 (2)	1.49 (2)	1.57 (2)
		33.0 (2)	16.5 (2)	11.9 (2)	11.6 (2)	12.7 (2)	16.1 (2)	16.9 (2)	18.4 (2)
		-.552 (2)	-.282 (2)	.236 (2)	.558 (2)	.595 (2)	.515 (2)	.518 (2)	.513 (2)
7	75-90	2.33 (2)	1.75 (2)	1.38 (2)	1.18 (2)	1.25 (2)	1.56 (2)	1.69 (2)	1.72 (2)
		29.2 (2)	16.5 (2)	12.1 (2)	11.8 (2)	12.9 (2)	14.4 (2)	15.3 (2)	15.3 (2)
		-.495 (2)	-.339 (2)	.096 (2)	.410 (2)	.486 (2)	.479 (2)	.445 (2)	.412 (2)



(d) Solar-zenith-angle bin 4, 45.57° to 53.13°.

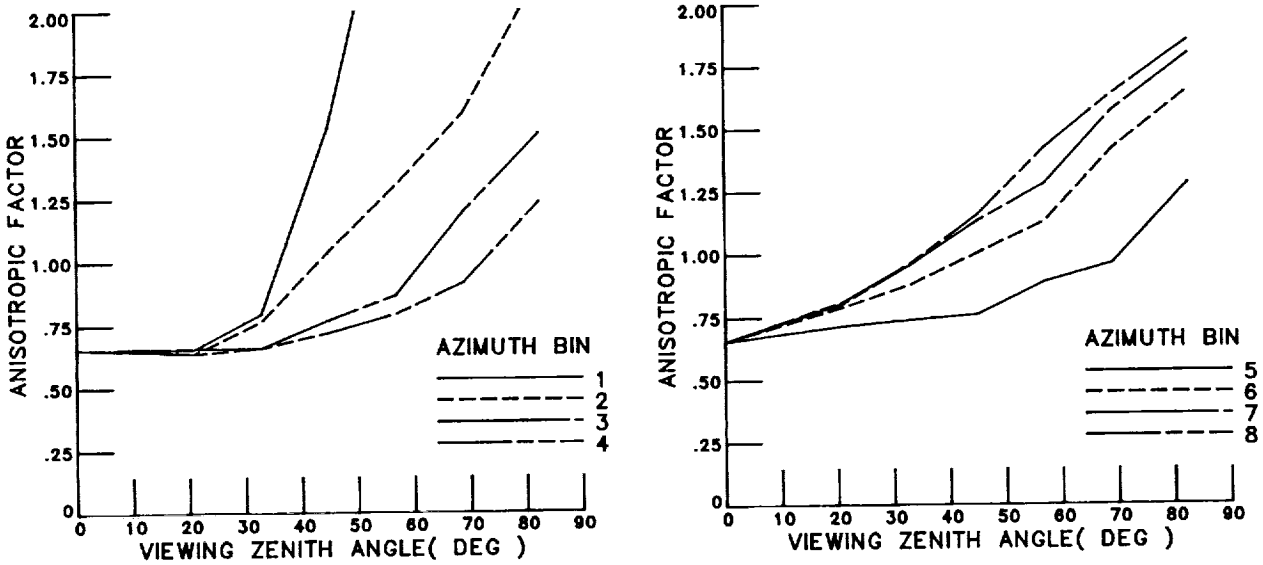
Figure 11. Continued.

SCENE TYPE : LAND-OCEAN MIX
DATA 1 - SW ANISOTROPIC FACTOR
2 - STANDARD DEVIATION OF SW RADIANCES(W/M**2/SR)
3 - CORRELATION OF LW AND SW RADIANCES
( ) - DATA SOURCE

SUN ZENITH : 53.1 - 60.0
MEAN ALBEDO : .1450 (19)
NORMALIZED ALBEDO : 1.2268 (19)

RELATIVE AZIMUTH

BIN NO.	VIEWING ZENITH ANGLE(DEG.)	1 0-9	2 9-30	3 30-60	4 60-90	5 90-120	6 120-150	7 150-171	8 171-180
1	0-15	.66 (2)	.66 (2)	.66 (2)	.66 (2)	.66 (2)	.66 (2)	.66 (2)	.66 (2)
		10.6 (2)	10.6 (2)	10.6 (2)	10.6 (2)	10.6 (2)	10.6 (2)	10.6 (2)	10.6 (2)
		.597 (2)	.597 (2)	.597 (2)	.597 (2)	.597 (2)	.597 (2)	.597 (2)	.597 (2)
2	15-27	.66 (2)	.64 (2)	.64 (2)	.66 (2)	.72 (2)	.79 (2)	.81 (2)	.81 (2)
		8.9 (2)	8.7 (2)	9.4 (2)	10.9 (2)	12.6 (2)	12.4 (2)	12.5 (2)	12.6 (2)
		.600 (2)	.573 (2)	.502 (2)	.556 (2)	.560 (2)	.528 (2)	.610 (2)	.556 (2)
3	27-39	.80 (2)	.77 (2)	.66 (2)	.66 (2)	.74 (2)	.88 (2)	.96 (2)	.96 (2)
		7.7 (2)	7.6 (2)	9.7 (2)	10.1 (2)	11.8 (2)	14.9 (2)	14.7 (2)	13.9 (2)
		.112 (2)	.352 (2)	.488 (2)	.581 (2)	.558 (2)	.514 (2)	.619 (2)	.549 (2)
4	39-51	1.53 (2)	1.04 (2)	.77 (2)	.72 (2)	.76 (2)	1.00 (2)	1.13 (2)	1.16 (2)
		24.5 (2)	11.3 (2)	9.6 (2)	10.3 (2)	10.7 (2)	14.7 (2)	16.3 (2)	16.6 (2)
		-.586 (2)	-.239 (2)	.461 (2)	.539 (2)	.619 (2)	.537 (2)	.616 (2)	.594 (2)
5	51-63	2.65 (2)	1.31 (2)	.87 (2)	.79 (2)	.85 (2)	1.13 (2)	1.28 (2)	1.42 (2)
		61.7 (2)	19.6 (2)	8.8 (2)	11.0 (2)	13.2 (2)	15.7 (2)	16.5 (2)	19.6 (2)
		-.565 (2)	-.319 (2)	.364 (2)	.483 (2)	.586 (2)	.444 (2)	.557 (2)	.580 (2)
6	63-75	3.36 (2)	1.59 (2)	1.20 (2)	.92 (2)	.96 (2)	1.42 (2)	1.57 (2)	1.64 (2)
		76.3 (2)	18.4 (2)	11.3 (2)	9.8 (2)	12.3 (2)	17.7 (2)	17.3 (2)	17.5 (2)
		-.552 (2)	-.402 (2)	-.029 (2)	.475 (2)	.556 (2)	.479 (2)	.443 (2)	.503 (2)
7	75-90	3.85 (2)	2.13 (2)	1.51 (2)	1.24 (2)	1.28 (2)	1.65 (2)	1.80 (2)	1.85 (2)
		76.5 (2)	26.0 (2)	10.4 (2)	10.1 (2)	12.1 (2)	13.8 (2)	15.4 (2)	15.1 (2)
		-.483 (2)	-.394 (2)	-.064 (2)	.330 (2)	.452 (2)	.484 (2)	.434 (2)	.485 (2)



(e) Solar-zenith-angle bin 5, 53.13° to 60.00°.

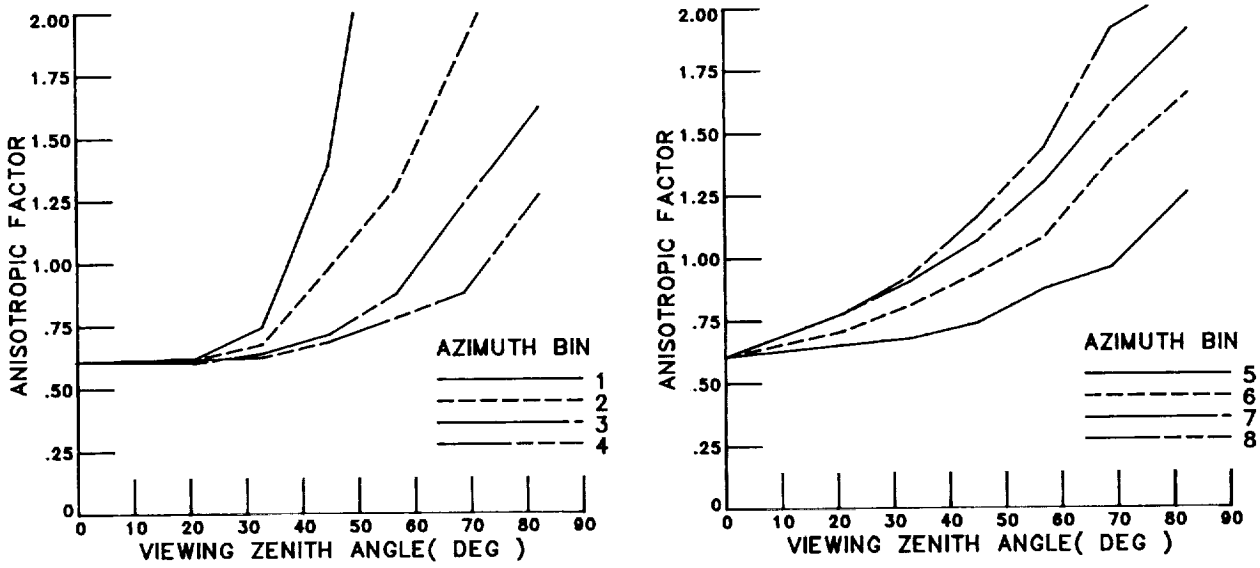
Figure 11. Continued.

SCENE TYPE : LAND-OCEAN MIX
DATA 1 - SW ANISOTROPIC FACTOR
2 - STANDARD DEVIATION OF SW RADIANCES(W/M**2/SR)
3 - CORRELATION OF LW AND SW RADIANCES
( ) - DATA SOURCE

SUN ZENITH : 60.0 - 66.4
MEAN ALBEDO : .1597 (19)
NORMALIZED ALBEDO : 1.3530 (19)

RELATIVE AZIMUTH

BIN NO.	1	2	3	4	5	6	7	8
ANGLE(DEG.)	0-9	9-30	30-60	60-90	90-120	120-150	150-171	171-180
VIEWING ZENITH BIN NO. ANGLE(DEG.)								
1 0-15	.61 (2)	.61 (2)	.61 (2)	.61 (2)	.61 (2)	.61 (2)	.61 (2)	.61 (2)
	8.4 (2)	8.4 (2)	8.4 (2)	8.4 (2)	8.4 (2)	8.4 (2)	8.4 (2)	8.4 (2)
	.650 (2)	.650 (2)	.650 (2)	.650 (2)	.650 (2)	.650 (2)	.650 (2)	.650 (2)
2 15-27	.62 (2)	.61 (2)	.60 (2)	.61 (2)	.65 (2)	.71 (2)	.78 (2)	.78 (2)
	7.1 (2)	6.7 (2)	7.3 (2)	8.2 (2)	9.5 (2)	9.2 (2)	10.8 (2)	11.4 (2)
	.603 (2)	.607 (2)	.513 (2)	.545 (2)	.531 (2)	.590 (2)	.627 (2)	.493 (2)
3 27-39	.74 (2)	.68 (2)	.64 (2)	.62 (2)	.66 (2)	.81 (2)	.91 (2)	.93 (2)
	4.9 (2)	5.3 (2)	6.8 (2)	7.9 (2)	8.4 (2)	10.5 (2)	12.7 (2)	11.6 (2)
	.394 (2)	.443 (2)	.492 (2)	.545 (2)	.640 (2)	.643 (2)	.632 (2)	.408 (2)
4 39-51	1.39 (2)	.98 (2)	.71 (2)	.69 (2)	.74 (2)	.94 (2)	1.07 (2)	1.16 (2)
	18.9 (2)	8.5 (2)	6.6 (2)	7.9 (2)	8.9 (2)	11.5 (2)	13.2 (2)	16.0 (2)
	-.512 (2)	-.275 (2)	.440 (2)	.585 (2)	.604 (2)	.592 (2)	.598 (2)	.421 (2)
5 51-63	2.96 (2)	1.30 (2)	.88 (2)	.78 (2)	.88 (2)	1.08 (2)	1.30 (2)	1.44 (2)
	65.1 (2)	16.8 (2)	6.8 (2)	8.2 (2)	10.0 (2)	12.0 (2)	14.1 (2)	17.6 (2)
	-.498 (2)	-.337 (2)	.398 (2)	.600 (2)	.482 (2)	.551 (2)	.606 (2)	.474 (2)
6 63-75	4.94 (2)	1.67 (2)	1.23 (2)	.88 (2)	.96 (2)	1.39 (2)	1.61 (2)	1.92 (2)
	113.9 (2)	29.5 (2)	11.7 (2)	8.6 (2)	9.5 (2)	14.1 (2)	15.0 (2)	21.4 (2)
	-.593 (2)	-.405 (2)	-.118 (2)	.496 (2)	.539 (2)	.503 (2)	.477 (2)	.500 (2)
7 75-90	3.63 (2)	2.49 (2)	1.62 (2)	1.27 (2)	1.26 (2)	1.65 (2)	1.91 (2)	2.09 (2)
	116.4 (2)	28.5 (2)	10.1 (2)	9.3 (2)	11.6 (2)	13.6 (2)	13.5 (2)	15.8 (2)
	-.586 (2)	-.561 (2)	.089 (2)	.350 (2)	.517 (2)	.554 (2)	.324 (2)	.546 (2)



(f) Solar-zenith-angle bin 6, 60.00° to 66.42°.

Figure 11. Continued.

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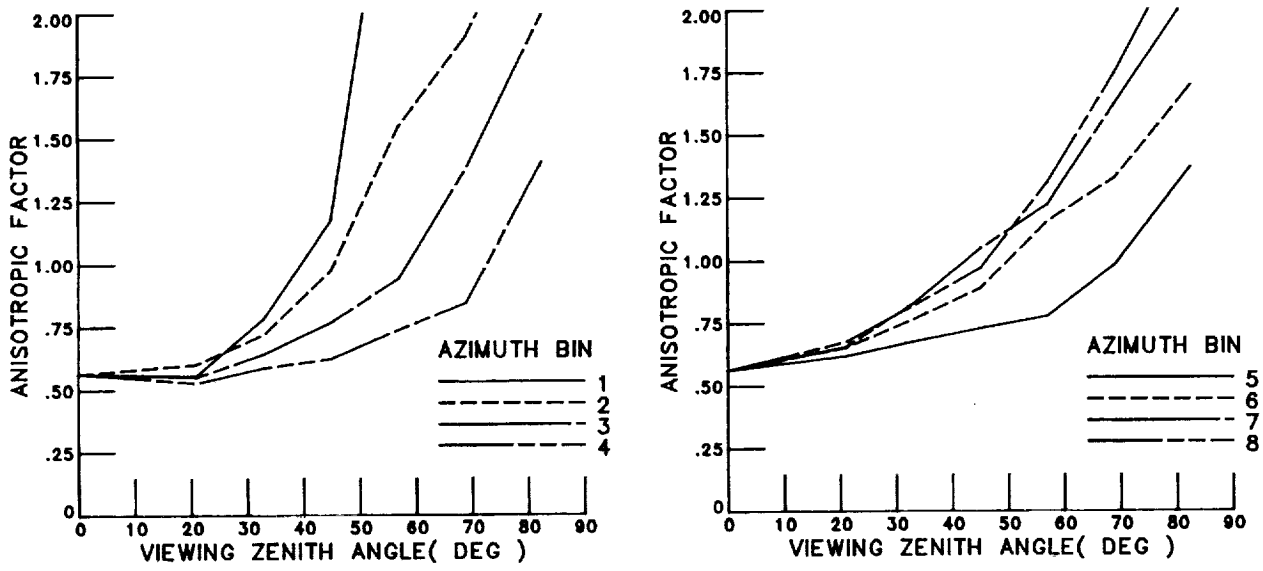
SCENE TYPE : LAND-OCEAN MIX
DATA 1 - SW ANISOTROPIC FACTOR
2 - STANDARD DEVIATION OF SW RADIANCES(W/M**2/SR)
3 - CORRELATION OF LW AND SW RADIANCES
( ) - DATA SOURCE

SUN ZENITH : 66.4 - 72.5
MEAN ALBEDO : .1830 (19)
NORMALIZED ALBEDO : 1.5508 (19)

RELATIVE AZIMUTH

VIEWING ZENITH BIN NO.	VIEWING ZENITH ANGLE(DEG.)	BIN NO. 1 ANGLE(DEG.) 0-9	2 9-30	3 30-60	4 60-90	5 90-120	6 120-150	7 150-171	8 171-180
1	0-15	.56 (2)	.56 (2)	.56 (2)	.56 (2)	.56 (2)	.56 (2)	.56 (2)	.56 (2)
		5.3 (2)	5.3 (2)	5.3 (2)	5.3 (2)	5.3 (2)	5.3 (2)	5.3 (2)	5.3 (2)
		.439 (2)	.439 (2)	.439 (2)	.439 (2)	.439 (2)	.439 (2)	.439 (2)	.439 (2)
2	15-27	.56 (2)	.60 (2)	.55 (2)	.53 (2)	.62 (2)	.65 (2)	.66 (2)	.68 (2)
		6.5 (2)	6.5 (2)	7.6 (2)	4.7 (2)	6.6 (2)	7.4 (2)	6.5 (2)	7.5 (2)
		.394 (2)	.342 (2)	.328 (2)	.493 (2)	.584 (2)	.581 (2)	.540 (2)	.572 (2)
3	27-39	.78 (2)	.72 (2)	.64 (2)	.59 (2)	.66 (2)	.77 (2)	.83 (2)	.82 (2)
		4.7 (2)	5.6 (2)	6.3 (2)	6.1 (2)	7.4 (2)	8.3 (2)	8.7 (2)	7.8 (2)
		.245 (2)	.399 (2)	.594 (2)	.577 (2)	.611 (2)	.491 (2)	.563 (2)	.497 (2)
4	39-51	1.17 (2)	.96 (2)	.77 (2)	.62 (2)	.73 (2)	.89 (2)	1.05 (2)	.97 (2)
		9.0 (2)	7.4 (2)	6.5 (2)	5.6 (2)	8.0 (2)	9.4 (2)	9.7 (2)	8.0 (2)
		-.379 (2)	-.203 (2)	.458 (2)	.583 (2)	.664 (2)	.370 (2)	.629 (2)	.406 (2)
5	51-63	2.60 (2)	1.55 (2)	.94 (2)	.74 (2)	.78 (2)	1.16 (2)	1.22 (2)	1.31 (2)
		39.0 (2)	16.0 (2)	7.2 (2)	5.7 (2)	6.2 (2)	11.4 (2)	9.2 (2)	11.4 (2)
		-.568 (2)	-.479 (2)	.239 (2)	.594 (2)	.624 (2)	.405 (2)	.616 (2)	.541 (2)
6	63-75	5.74 (2)	1.91 (2)	1.38 (2)	.85 (2)	.98 (2)	1.33 (2)	1.62 (2)	1.75 (2)
		107.7 (2)	23.2 (2)	11.8 (2)	10.5 (2)	6.8 (2)	10.6 (2)	10.9 (2)	12.4 (2)
		-.544 (2)	-.328 (2)	-.134 (2)	.310 (2)	.187 (2)	.521 (2)	.441 (2)	.418 (2)
7	75-90	6.83 (2)	2.52 (2)	1.99 (2)	1.41 (2)	1.37 (2)	1.70 (2)	2.07 (2)	2.32 (2)
		98.9 (2)	24.9 (2)	17.6 (2)	9.3 (2)	6.8 (2)	11.6 (2)	14.2 (2)	16.3 (2)
		-.653 (2)	-.561 (2)	-.335 (2)	.140 (2)	.300 (2)	.251 (2)	.029 (2)	.280 (2)



(g) Solar-zenith-angle bin 7, 66.42° to 72.54°.

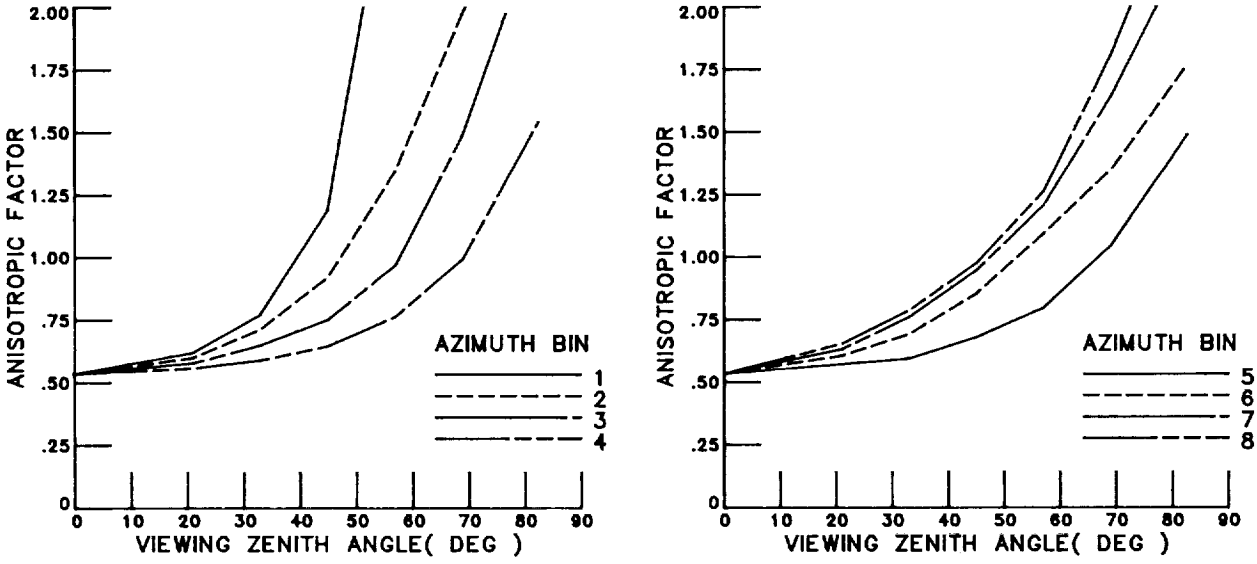
Figure 11. Continued.

SCENE TYPE : LAND-OCEAN MIX
DATA 1 - SW ANISOTROPIC FACTOR
2 - STANDARD DEVIATION OF SW RADIANCES(W/M**2/SR)
3 - CORRELATION OF LW AND SW RADIANCES
( ) - DATA SOURCE

SUN ZENITH : 72.5 - 78.5
MEAN ALBEDO : .2170 (19)
NORMALIZED ALBEDO : 1.8390 (19)

RELATIVE AZIMUTH

BIN NO. / VIEWING ZENITH ANGLE(DEG.)		1 0-9	2 9-30	3 30-60	4 60-90	5 90-120	6 120-150	7 150-171	8 171-180
1	0-15	.53 (2)	.53 (2)	.53 (2)	.53 (2)	.53 (2)	.53 (2)	.53 (2)	.53 (2)
		3.8 (2)	3.8 (2)	3.8 (2)	3.8 (2)	3.8 (2)	3.8 (2)	3.8 (2)	3.8 (2)
		.509 (2)	.509 (2)	.509 (2)	.509 (2)	.509 (2)	.509 (2)	.509 (2)	.509 (2)
2	15-27	.62 (2)	.60 (2)	.58 (2)	.56 (2)	.57 (2)	.61 (2)	.63 (2)	.65 (2)
		4.6 (2)	4.5 (2)	5.6 (2)	4.0 (2)	4.3 (2)	4.3 (2)	4.2 (2)	4.6 (2)
		.348 (2)	.366 (2)	.325 (2)	.512 (2)	.520 (2)	.545 (2)	.542 (2)	.497 (2)
3	27-39	.77 (2)	.71 (2)	.65 (2)	.59 (2)	.56 (2)	.69 (2)	.76 (2)	.79 (2)
		3.9 (2)	4.1 (2)	3.9 (2)	3.8 (2)	4.7 (2)	5.1 (2)	5.0 (2)	5.0 (2)
		.190 (2)	.301 (2)	.452 (2)	.541 (2)	.561 (2)	.499 (2)	.513 (2)	.533 (2)
4	39-51	1.19 (2)	.92 (2)	.75 (2)	.65 (2)	.68 (2)	.85 (2)	.95 (2)	.98 (2)
		8.0 (2)	5.9 (2)	4.4 (2)	3.7 (2)	4.6 (2)	6.7 (2)	5.8 (2)	5.6 (2)
		-.468 (2)	-.050 (2)	.343 (2)	.550 (2)	.567 (2)	.439 (2)	.502 (2)	.551 (2)
5	51-63	2.71 (2)	1.35 (2)	.97 (2)	.76 (2)	.80 (2)	1.09 (2)	1.21 (2)	1.26 (2)
		39.7 (2)	9.4 (2)	5.4 (2)	4.2 (2)	5.0 (2)	8.1 (2)	7.5 (2)	7.5 (2)
		-.546 (2)	-.304 (2)	.189 (2)	.524 (2)	.594 (2)	.508 (2)	.518 (2)	.556 (2)
6	63-75	5.60 (2)	1.98 (2)	1.49 (2)	.99 (2)	1.05 (2)	1.35 (2)	1.65 (2)	1.81 (2)
		84.2 (2)	20.5 (2)	11.1 (2)	10.2 (2)	6.1 (2)	7.6 (2)	8.0 (2)	10.8 (2)
		-.517 (2)	-.211 (2)	-.132 (2)	.204 (2)	.323 (2)	.533 (2)	.418 (2)	.499 (2)
7	75-90	7.95 (2)	2.60 (2)	2.34 (2)	1.54 (2)	1.46 (2)	1.77 (2)	2.24 (2)	2.55 (2)
		89.8 (2)	22.0 (2)	20.8 (2)	8.9 (2)	4.3 (2)	9.1 (2)	12.5 (2)	14.7 (2)
		-.540 (2)	-.249 (2)	-.297 (2)	-.036 (2)	.154 (2)	.299 (2)	.106 (2)	.487 (2)



(h) Solar-zenith-angle bin 8, 72.54° to 78.46°.

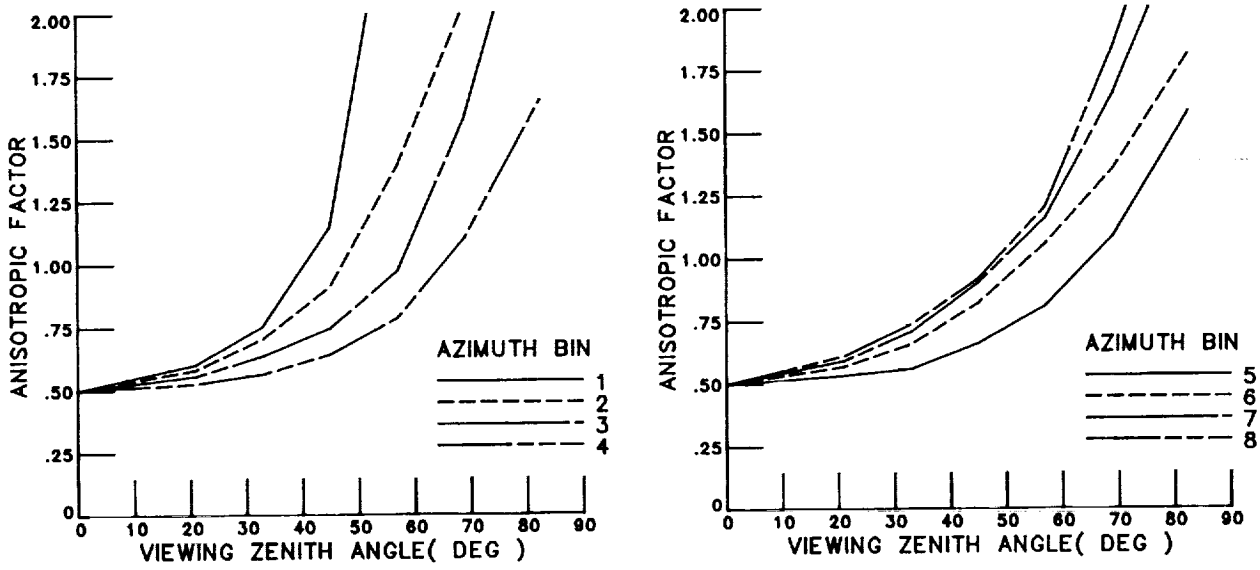
Figure 11. Continued.

SCENE TYPE : LAND-OCEAN MIX
DATA 1 - SW ANISOTROPIC FACTOR
2 - STANDARD DEVIATION OF SW RADIANCES(W/M**2/SR)
3 - CORRELATION OF LW AND SW RADIANCES
( ) - DATA SOURCE

SUN ZENITH : 78.5 - 84.3
MEAN ALBEDO : .2690 (19)
NORMALIZED ALBEDO : 2.2797 (19)

RELATIVE AZIMUTH

BIN NO. / ANGLE(DEG.)		1 0-9	2 9-30	3 30-60	4 60-90	5 90-120	6 120-150	7 150-171	8 171-180
VIEWING ZENITH BIN NO.	ANGLE(DEG.)								
1	0-15	.50 (2)	.50 (2)	.50 (2)	.50 (2)	.50 (2)	.50 (2)	.50 (2)	.50 (2)
		2.2 (2)	2.2 (2)	2.2 (2)	2.2 (2)	2.2 (2)	2.2 (2)	2.2 (2)	2.2 (2)
		.415 (2)	.415 (2)	.415 (2)	.415 (2)	.415 (2)	.415 (2)	.415 (2)	.415 (2)
2	15-27	.60 (2)	.58 (2)	.55 (2)	.52 (2)	.53 (2)	.57 (2)	.59 (2)	.61 (2)
		3.2 (2)	2.9 (2)	3.6 (2)	2.4 (2)	2.5 (2)	2.5 (2)	2.4 (2)	2.7 (2)
		.251 (2)	.255 (2)	.232 (2)	.436 (2)	.445 (2)	.474 (2)	.468 (2)	.422 (2)
3	27-39	.75 (2)	.70 (2)	.63 (2)	.56 (2)	.56 (2)	.66 (2)	.71 (2)	.74 (2)
		2.8 (2)	2.8 (2)	2.5 (2)	2.2 (2)	2.6 (2)	3.1 (2)	2.9 (2)	2.9 (2)
		.065 (2)	.160 (2)	.330 (2)	.471 (2)	.514 (2)	.413 (2)	.429 (2)	.463 (2)
4	39-51	1.15 (2)	.91 (2)	.75 (2)	.64 (2)	.66 (2)	.82 (2)	.90 (2)	.92 (2)
		5.8 (2)	4.6 (2)	3.0 (2)	2.1 (2)	2.7 (2)	4.3 (2)	3.4 (2)	3.1 (2)
		-.473 (2)	-.145 (2)	.201 (2)	.433 (2)	.515 (2)	.342 (2)	.408 (2)	.464 (2)
5	51-63	2.65 (2)	1.39 (2)	.97 (2)	.79 (2)	.81 (2)	1.06 (2)	1.16 (2)	1.20 (2)
		29.0 (2)	8.0 (2)	4.0 (2)	2.6 (2)	3.0 (2)	4.9 (2)	4.5 (2)	4.2 (2)
		-.546 (2)	-.369 (2)	.048 (2)	.418 (2)	.552 (2)	.438 (2)	.442 (2)	.481 (2)
6	63-75	5.26 (2)	2.03 (2)	1.56 (2)	1.10 (2)	1.05 (2)	1.35 (2)	1.65 (2)	1.84 (2)
		61.3 (2)	16.4 (2)	9.3 (2)	8.7 (2)	4.4 (2)	4.4 (2)	5.0 (2)	7.4 (2)
		-.514 (2)	-.245 (2)	-.210 (2)	.056 (2)	.246 (2)	.446 (2)	.254 (2)	.458 (2)
7	75-90	8.94 (2)	2.66 (2)	2.63 (2)	1.65 (2)	1.58 (2)	1.81 (2)	2.37 (2)	2.71 (2)
		74.6 (2)	17.9 (2)	20.6 (2)	8.1 (2)	3.6 (2)	6.4 (2)	10.2 (2)	10.4 (2)
		-.536 (2)	-.289 (2)	-.377 (2)	-.217 (2)	-.303 (2)	.112 (2)	-.075 (2)	.447 (2)



(i) Solar-zenith-angle bin 9, 78.46° to 84.26°.

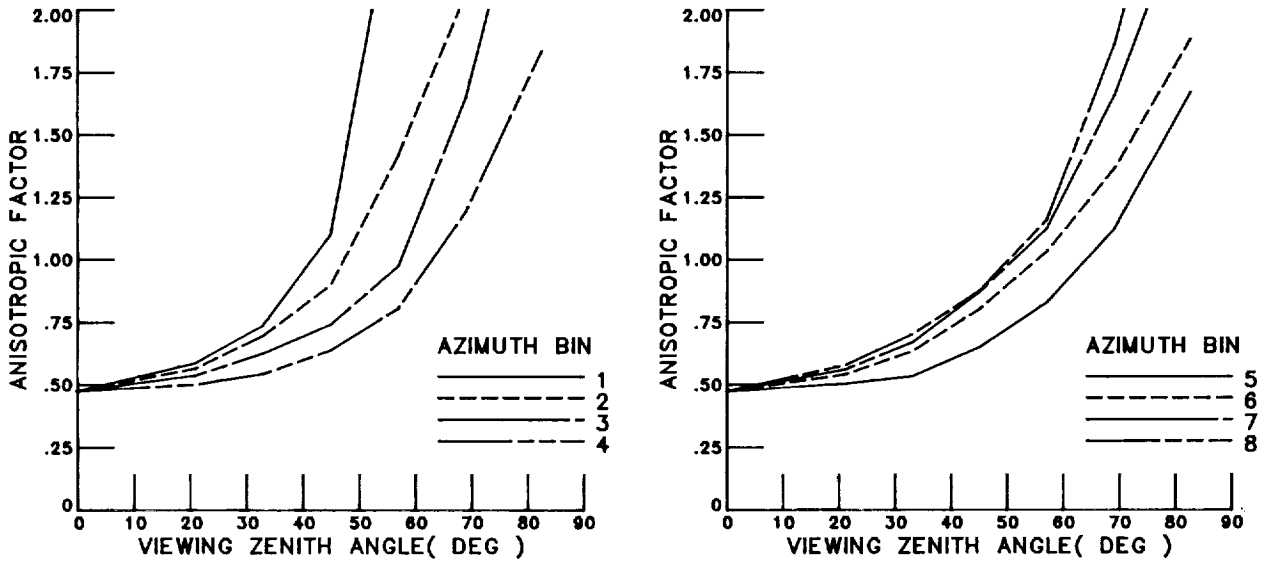
Figure 11. Continued.

SCENE TYPE : LAND-OCEAN MIX
DATA 1 - SW ANISOTROPIC FACTOR
2 - STANDARD DEVIATION OF SW RADIANCES(W/M**2/SR)
3 - CORRELATION OF LW AND SW RADIANCES
( ) - DATA SOURCE

SUN ZENITH : 84.3 - 90.0
MEAN ALBEDO : .3300 (19)
NORMALIZED ALBEDO : 2.7566 (19)

RELATIVE AZIMUTH

VIEWING ZENITH BIN NO.	VIEWING ZENITH ANGLE(DEG.)	BIN NO. 1 ANGLE(DEG.) 0-9	2 9-30	3 30-60	4 60-90	5 90-120	6 120-150	7 150-171	8 171-180
1	0-15	.47 (2)	.47 (2)	.47 (2)	.47 (2)	.47 (2)	.47 (2)	.47 (2)	.47 (2)
		.8 (2)	.8 (2)	.8 (2)	.8 (2)	.8 (2)	.8 (2)	.8 (2)	.8 (2)
		.357 (2)	.357 (2)	.357 (2)	.357 (2)	.357 (2)	.357 (2)	.357 (2)	.357 (2)
2	15-27	.59 (2)	.57 (2)	.54 (2)	.50 (2)	.50 (2)	.54 (2)	.56 (2)	.58 (2)
		1.2 (2)	1.1 (2)	1.3 (2)	.9 (2)	.9 (2)	.9 (2)	.8 (2)	1.0 (2)
		.222 (2)	.211 (2)	.193 (2)	.401 (2)	.404 (2)	.433 (2)	.430 (2)	.395 (2)
3	27-39	.74 (2)	.70 (2)	.63 (2)	.54 (2)	.53 (2)	.63 (2)	.67 (2)	.70 (2)
		1.1 (2)	1.1 (2)	.9 (2)	.8 (2)	1.0 (2)	1.1 (2)	1.1 (2)	1.0 (2)
		.060 (2)	.121 (2)	.276 (2)	.438 (2)	.495 (2)	.371 (2)	.388 (2)	.436 (2)
4	39-51	1.10 (2)	.90 (2)	.74 (2)	.64 (2)	.65 (2)	.80 (2)	.87 (2)	.88 (2)
		2.1 (2)	1.8 (2)	1.2 (2)	.7 (2)	1.0 (2)	1.6 (2)	1.3 (2)	1.1 (2)
		-.444 (2)	-.153 (2)	.155 (2)	.341 (2)	.494 (2)	.300 (2)	.366 (2)	.411 (2)
5	51-63	2.56 (2)	1.42 (2)	.97 (2)	.81 (2)	.83 (2)	1.03 (2)	1.12 (2)	1.16 (2)
		11.1 (2)	3.4 (2)	1.6 (2)	1.0 (2)	1.2 (2)	1.8 (2)	1.6 (2)	1.5 (2)
		-.542 (2)	-.379 (2)	.018 (2)	.368 (2)	.534 (2)	.408 (2)	.412 (2)	.438 (2)
6	63-75	3.45 (2)	2.06 (2)	1.65 (2)	1.19 (2)	1.12 (2)	1.36 (2)	1.66 (2)	1.86 (2)
		23.3 (2)	6.8 (2)	4.0 (2)	4.0 (2)	1.6 (2)	1.6 (2)	1.9 (2)	3.1 (2)
		-.509 (2)	-.241 (2)	-.221 (2)	-.003 (2)	.256 (2)	.393 (2)	.175 (2)	.465 (2)
7	75-90	9.05 (2)	2.69 (2)	2.83 (2)	1.84 (2)	1.67 (2)	1.88 (2)	2.46 (2)	2.95 (2)
		28.7 (2)	7.4 (2)	9.3 (2)	4.0 (2)	1.5 (2)	2.7 (2)	4.4 (2)	5.2 (2)
		-.930 (2)	-.269 (2)	-.385 (2)	-.268 (2)	-.312 (2)	.015 (2)	-.127 (2)	.491 (2)



(j) Solar-zenith-angle bin 10, 84.26° to 90.00°.

Figure 11. Concluded.

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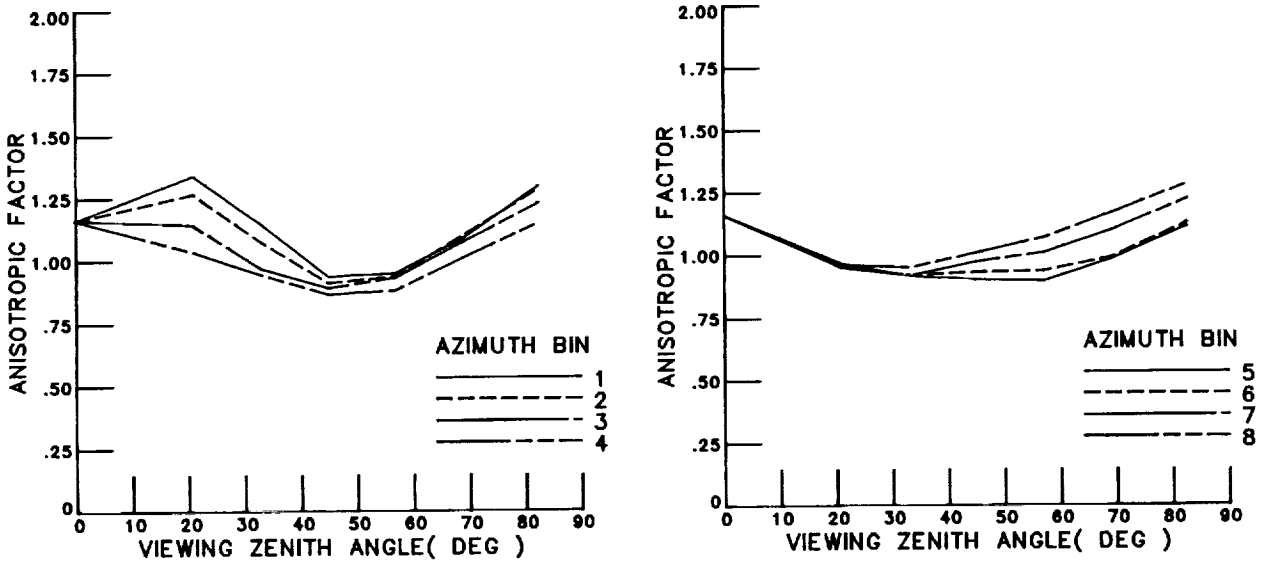
SCENE TYPE : PARTLY CLOUDY OVER OCEAN
DATA 1 - SW ANISOTROPIC FACTOR
2 - STANDARD DEVIATION OF SW RADIANCES(W/M**2/SR)
3 - CORRELATION OF LW AND SW RADIANCES
( ) - DATA SOURCE

SUN ZENITH : .0 - 25.8
MEAN ALBEDO : .1250 (18)
NORMALIZED ALBEDO : 1.0000 (18)

RELATIVE AZIMUTH

BIN NO. / ANGLE(DEG.)		1 0-9	2 9-30	3 30-60	4 60-90	5 90-120	6 120-150	7 150-171	8 171-180
VIEWING ZENITH BIN NO.	ANGLE(DEG.)								
1	0-15	1.16 (11)	1.16 (11)	1.16 (11)	1.16 (11)	1.16 (11)	1.16 (11)	1.16 (11)	1.16 (11)
		18.8 (11)	18.8 (11)	18.8 (11)	18.8 (11)	18.8 (11)	18.8 (11)	18.8 (11)	18.8 (11)
		-.294 (11)	-.294 (11)	-.294 (11)	-.294 (11)	-.294 (11)	-.294 (11)	-.294 (11)	-.294 (11)
2	15-27	1.34 (11)	1.27 (11)	1.14 (11)	1.03 (11)	.97 (11)	.95 (11)	.95 (11)	.96 (11)
		23.3 (11)	18.3 (11)	16.9 (11)	18.1 (11)	18.2 (11)	18.9 (11)	19.0 (11)	19.2 (11)
		-.284 (11)	-.355 (11)	-.410 (11)	-.384 (11)	-.373 (11)	-.400 (11)	-.383 (11)	-.402 (11)
3	27-39	1.15 (11)	1.07 (11)	.97 (11)	.94 (11)	.92 (11)	.92 (11)	.92 (11)	.95 (11)
		18.3 (11)	17.2 (11)	17.1 (11)	18.8 (11)	18.1 (11)	18.9 (11)	18.8 (11)	19.2 (11)
		-.446 (11)	-.419 (11)	-.369 (11)	-.377 (11)	-.366 (11)	-.382 (11)	-.392 (11)	-.409 (11)
4	39-51	.94 (11)	.91 (11)	.89 (11)	.87 (11)	.90 (11)	.93 (11)	.97 (11)	1.01 (11)
		18.3 (11)	17.9 (11)	18.3 (11)	17.6 (11)	18.9 (11)	19.0 (11)	20.5 (11)	20.8 (11)
		-.466 (11)	-.446 (11)	-.455 (11)	-.364 (11)	-.390 (11)	-.367 (11)	-.413 (11)	-.388 (11)
5	51-63	.93 (11)	.94 (11)	.93 (11)	.88 (11)	.90 (11)	.94 (11)	1.01 (11)	1.07 (11)
		18.2 (11)	17.6 (11)	17.6 (11)	15.8 (11)	16.0 (11)	16.9 (11)	18.6 (11)	19.8 (11)
		-.496 (11)	-.475 (11)	-.426 (11)	-.319 (11)	-.375 (11)	-.332 (11)	-.406 (11)	-.394 (11)
6	63-75	1.09 (11)	1.10 (11)	1.07 (11)	1.01 (11)	.98 (11)	.99 (11)	1.10 (11)	1.17 (11)
		18.0 (11)	19.1 (11)	17.9 (11)	15.6 (11)	15.0 (11)	15.3 (11)	17.1 (11)	18.3 (11)
		-.503 (11)	-.516 (11)	-.472 (11)	-.395 (11)	-.363 (11)	-.360 (11)	-.410 (11)	-.423 (11)
7	75-90	1.29 (11)	1.28 (11)	1.23 (11)	1.15 (11)	1.11 (11)	1.13 (11)	1.22 (11)	1.28 (11)
		18.6 (11)	18.9 (11)	16.7 (11)	14.4 (11)	13.4 (11)	13.7 (11)	15.4 (11)	16.3 (11)
		-.512 (11)	-.520 (11)	-.474 (11)	-.415 (11)	-.387 (11)	-.394 (11)	-.427 (11)	-.444 (11)



(a) Solar-zenith-angle bin 1, 0° to 25.84°.

Figure 12. Bidirectional model for partly cloudy over ocean. (See table 5 for explanation of data sources.)

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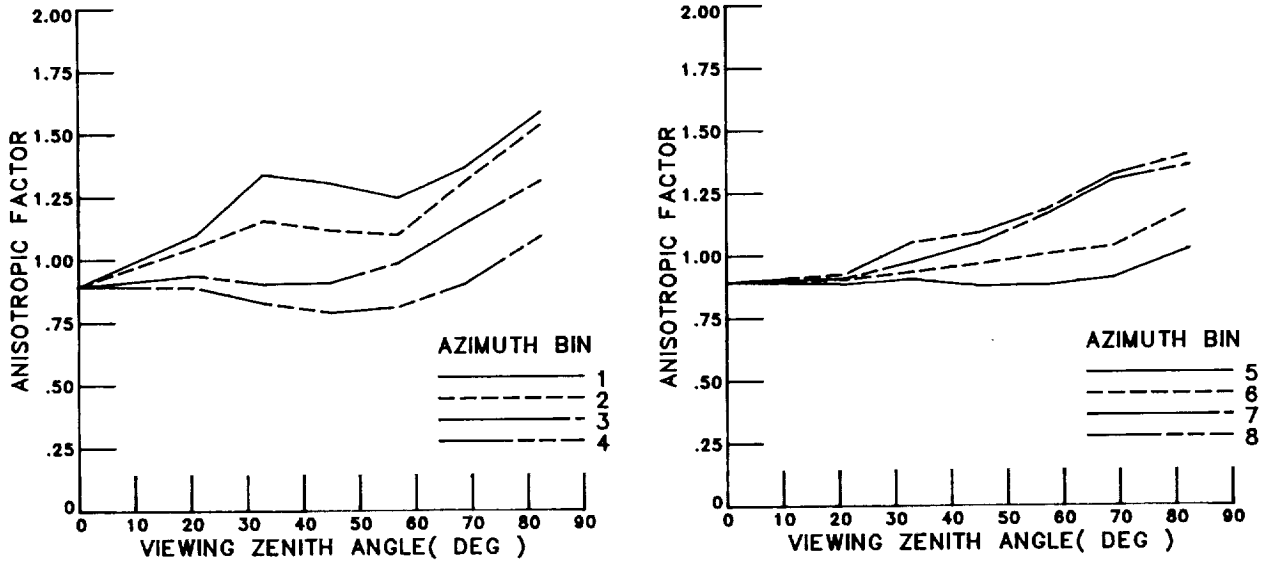
SCENE TYPE : PARTLY CLOUDY OVER OCEAN
DATA 1 - SW ANISOTROPIC FACTOR
2 - STANDARD DEVIATION OF SW RADIANCES(W/M**2/SR)
3 - CORRELATION OF LW AND SW RADIANCES
( ) - DATA SOURCE

SUN ZENITH : 25.8 - 36.9
MEAN ALBEDO : .1400 (18)
NORMALIZED ALBEDO : 1.1200 (18)

RELATIVE AZIMUTH

BIN NO.	1	2	3	4	5	6	7	8
ANGLE(DEG.)	0-9	9-30	30-60	60-90	90-120	120-150	150-171	171-180
VIEWING ZENITH BIN NO. ANGLE(DEG.)								
1 0-15	.89 (11)	.89 (11)	.89 (11)	.89 (11)	.89 (11)	.89 (11)	.89 (11)	.89 (11)
	19.4 (11)	19.4 (11)	19.4 (11)	19.4 (11)	19.4 (11)	19.4 (11)	19.4 (11)	19.4 (11)
	-.463 (11)	-.463 (11)	-.463 (11)	-.463 (11)	-.463 (11)	-.463 (11)	-.463 (11)	-.463 (11)
2 15-27	1.10 (11)	1.05 (11)	.94 (11)	.89 (11)	.85 (11)	.90 (11)	.91 (11)	.92 (11)
	16.2 (11)	15.3 (11)	17.7 (11)	20.3 (11)	20.2 (11)	20.3 (11)	19.7 (11)	21.5 (11)
	-.472 (11)	-.451 (11)	-.477 (11)	-.460 (11)	-.477 (11)	-.458 (11)	-.458 (11)	-.476 (11)
3 27-39	1.34 (11)	1.16 (11)	.96 (11)	.83 (11)	.90 (11)	.93 (11)	.97 (11)	1.05 (11)
	20.1 (11)	14.8 (11)	17.0 (11)	17.4 (11)	19.9 (11)	19.3 (11)	19.4 (11)	22.4 (11)
	-.346 (11)	-.437 (11)	-.506 (11)	-.473 (11)	-.475 (11)	-.440 (11)	-.437 (11)	-.459 (11)
4 39-51	1.31 (11)	1.12 (11)	.91 (11)	.79 (11)	.88 (11)	.96 (11)	1.05 (11)	1.09 (11)
	18.1 (11)	17.5 (11)	18.2 (11)	16.3 (11)	19.1 (11)	19.3 (11)	20.7 (11)	21.4 (11)
	-.486 (11)	-.477 (11)	-.482 (11)	-.431 (11)	-.433 (11)	-.432 (11)	-.430 (11)	-.464 (11)
5 51-63	1.25 (11)	1.10 (11)	.99 (11)	.81 (11)	.88 (11)	1.00 (11)	1.16 (11)	1.18 (11)
	19.3 (11)	17.5 (11)	16.4 (11)	15.8 (11)	16.6 (11)	18.5 (11)	20.3 (11)	20.7 (11)
	-.519 (11)	-.498 (11)	-.515 (11)	-.463 (11)	-.425 (11)	-.389 (11)	-.469 (11)	-.450 (11)
6 63-75	1.37 (11)	1.31 (11)	1.15 (11)	.90 (11)	.91 (11)	1.04 (11)	1.30 (11)	1.32 (11)
	21.7 (11)	22.2 (11)	19.3 (11)	15.1 (11)	18.1 (11)	18.2 (11)	20.1 (11)	20.3 (11)
	-.531 (11)	-.535 (11)	-.508 (11)	-.469 (11)	-.404 (11)	-.361 (11)	-.424 (11)	-.438 (11)
7 75-90	1.59 (11)	1.54 (11)	1.31 (11)	1.09 (11)	1.02 (5)	1.18 (10)	1.36 (11)	1.40 (11)
	23.4 (11)	22.6 (11)	18.4 (11)	14.6 (11)	15.9 (5)	12.8 (10)	16.9 (11)	18.5 (11)
	-.507 (11)	-.562 (11)	-.505 (11)	-.481 (11)	-.393 (5)	-.274 (10)	-.419 (11)	-.424 (11)



(b) Solar-zenith-angle bin 2, 25.84° to 36.87°.

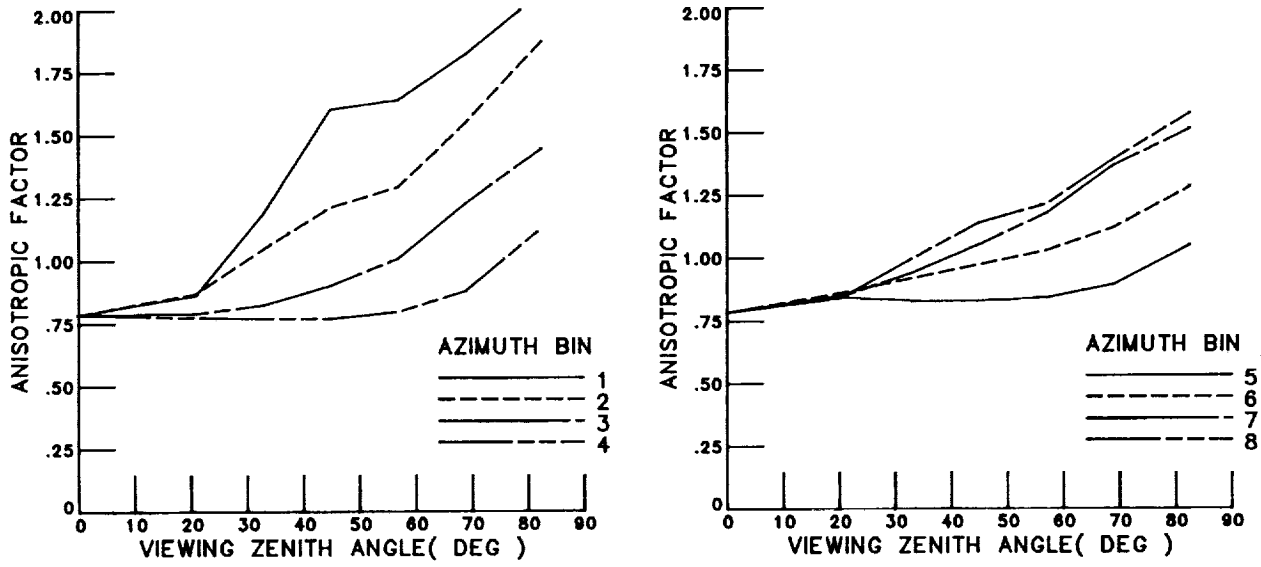
Figure 12. Continued.

SCENE TYPE : PARTLY CLOUDY OVER OCEAN
DATA 1 - SW ANISOTROPIC FACTOR
2 - STANDARD DEVIATION OF SW RADIANCES(W/M**2/SR)
3 - CORRELATION OF LW AND SW RADIANCES
( ) - DATA SOURCE

SUN ZENITH : 36.9 - 45.6
MEAN ALBEDO : .1500 (18)
NORMALIZED ALBEDO : 1.2000 (18)

RELATIVE AZIMUTH

BIN NO. / ANGLE(DEG.)		1 0-9	2 9-30	3 30-60	4 60-90	5 90-120	6 120-150	7 150-171	8 171-180
VIEWING ZENITH BIN NO.	ANGLE(DEG.)								
1	0-15	.78 (11)	.78 (11)	.78 (11)	.78 (11)	.78 (11)	.78 (11)	.78 (11)	.78 (11)
		18.0 (11)	18.0 (11)	18.0 (11)	18.0 (11)	18.0 (11)	18.0 (11)	18.0 (11)	18.0 (11)
		-.464 (11)	-.464 (11)	-.464 (11)	-.464 (11)	-.464 (11)	-.464 (11)	-.464 (11)	-.464 (11)
2	15-27	.86 (11)	.87 (11)	.79 (11)	.77 (11)	.84 (11)	.87 (11)	.85 (11)	.85 (11)
		15.1 (11)	16.1 (11)	16.3 (11)	17.3 (11)	18.9 (11)	19.1 (11)	18.7 (11)	18.3 (11)
		-.497 (11)	-.504 (11)	-.480 (11)	-.468 (11)	-.443 (11)	-.455 (11)	-.460 (11)	-.452 (11)
3	27-39	1.19 (11)	1.05 (11)	.82 (11)	.77 (11)	.83 (11)	.92 (11)	.94 (11)	1.00 (11)
		15.6 (11)	15.1 (11)	16.5 (11)	17.8 (11)	17.7 (11)	18.3 (11)	18.2 (11)	19.1 (11)
		-.475 (11)	-.492 (11)	-.497 (11)	-.406 (11)	-.454 (11)	-.496 (11)	-.443 (11)	-.521 (11)
4	39-51	1.60 (11)	1.21 (11)	.90 (11)	.77 (11)	.83 (11)	.97 (11)	1.05 (11)	1.14 (11)
		21.8 (11)	17.4 (11)	17.9 (11)	16.1 (11)	17.7 (11)	18.6 (11)	19.3 (11)	22.6 (11)
		-.328 (11)	-.440 (11)	-.521 (11)	-.472 (11)	-.490 (11)	-.450 (11)	-.436 (11)	-.487 (11)
5	51-63	1.64 (11)	1.29 (11)	1.01 (11)	.80 (11)	.84 (11)	1.03 (11)	1.18 (11)	1.22 (11)
		18.8 (11)	19.5 (11)	19.3 (11)	14.8 (11)	15.1 (11)	17.7 (11)	18.8 (11)	20.5 (11)
		-.393 (11)	-.511 (11)	-.527 (11)	-.471 (11)	-.419 (11)	-.398 (11)	-.474 (11)	-.480 (11)
6	63-75	1.82 (11)	1.55 (11)	1.23 (11)	.88 (11)	.90 (11)	1.12 (11)	1.37 (11)	1.39 (11)
		24.6 (11)	24.8 (11)	21.1 (11)	15.6 (11)	16.7 (11)	17.7 (11)	19.3 (11)	20.7 (11)
		-.501 (11)	-.552 (11)	-.485 (11)	-.450 (11)	-.380 (11)	-.408 (11)	-.461 (11)	-.453 (11)
7	75-90	2.07 (11)	1.87 (11)	1.44 (11)	1.13 (10)	1.05 (5)	1.28 (10)	1.51 (11)	1.58 (11)
		26.0 (11)	27.5 (11)	21.4 (11)	13.2 (10)	15.3 (5)	14.4 (10)	18.4 (11)	19.5 (11)
		-.466 (11)	-.579 (11)	-.513 (11)	-.294 (10)	-.359 (5)	-.381 (10)	-.385 (11)	-.412 (11)



(c) Solar-zenith-angle bin 3, 36.87° to 45.57°.

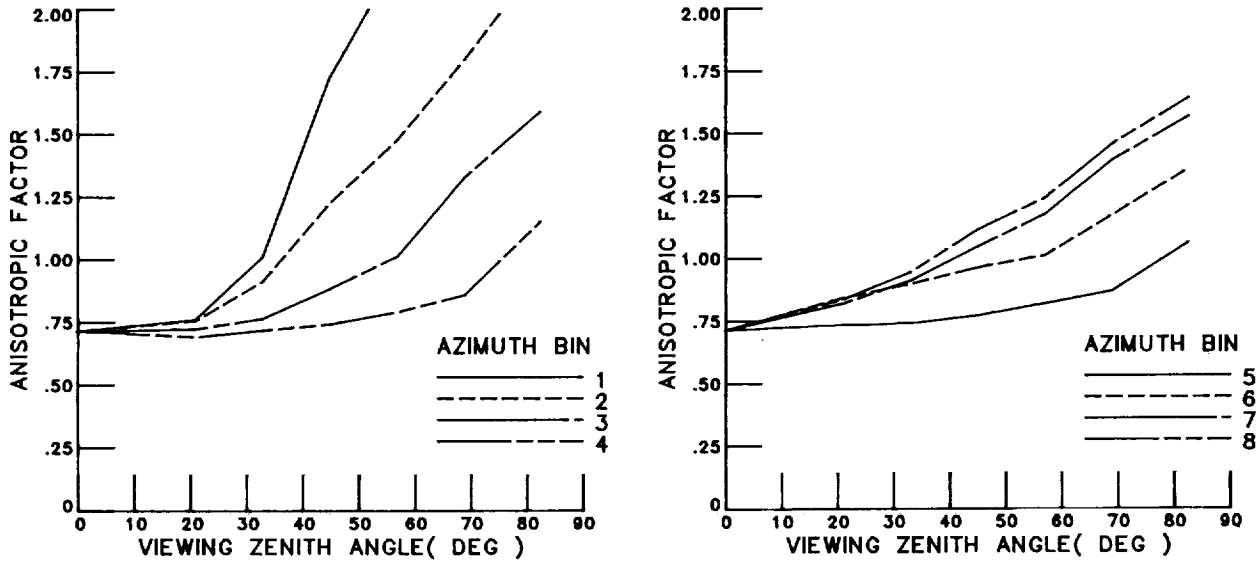
Figure 12. Continued.

SCENE TYPE : PARTLY CLOUDY OVER OCEAN
DATA 1 - SW ANISOTROPIC FACTOR
2 - STANDARD DEVIATION OF SW RADIANCES(W/M**2/SR)
3 - CORRELATION OF LW AND SW RADIANCES
( ) - DATA SOURCE

SUN ZENITH : 45.6 - 53.1
MEAN ALBEDO : .1700 (18)
NORMALIZED ALBEDO : 1.3600 (18)

RELATIVE AZIMUTH

BIN NO.	1	2	3	4	5	6	7	8
ANGLE(DEG.)	0-9	9-30	30-60	60-90	90-120	120-150	150-171	171-180
VIEWING ZENITH BIN NO. ANGLE(DEG.)								
1 0-15	.71 (11)	.71 (11)	.71 (11)	.71 (11)	.71 (11)	.71 (11)	.71 (11)	.71 (11)
	15.7 (11)	15.7 (11)	15.7 (11)	15.7 (11)	15.7 (11)	15.7 (11)	15.7 (11)	15.7 (11)
	-.414 (11)	-.414 (11)	-.414 (11)	-.414 (11)	-.414 (11)	-.414 (11)	-.414 (11)	-.414 (11)
2 15-27	.76 (11)	.76 (11)	.72 (11)	.69 (11)	.73 (11)	.84 (11)	.82 (11)	.84 (11)
	14.4 (11)	15.3 (11)	14.4 (11)	14.1 (11)	15.0 (11)	17.3 (11)	15.7 (11)	17.0 (11)
	-.402 (11)	-.464 (11)	-.434 (11)	-.410 (11)	-.395 (11)	-.404 (11)	-.352 (11)	-.386 (11)
3 27-39	1.01 (10)	.91 (11)	.77 (11)	.72 (11)	.74 (11)	.90 (11)	.91 (11)	.94 (11)
	14.1 (10)	13.9 (11)	14.3 (11)	14.1 (11)	13.3 (11)	16.3 (11)	15.9 (11)	16.2 (11)
	-.472 (10)	-.378 (11)	-.450 (11)	-.429 (11)	-.412 (11)	-.407 (11)	-.340 (11)	-.370 (11)
4 39-51	1.73 (11)	1.23 (11)	.86 (11)	.74 (11)	.77 (11)	.96 (11)	1.05 (11)	1.12 (11)
	25.0 (11)	17.3 (11)	17.3 (11)	14.2 (11)	14.9 (11)	17.1 (11)	17.6 (11)	19.9 (11)
	-.140 (11)	-.419 (11)	-.480 (11)	-.379 (11)	-.444 (11)	-.446 (11)	-.378 (11)	-.362 (11)
5 51-63	2.20 (11)	1.48 (11)	1.01 (11)	.79 (11)	.82 (11)	1.01 (11)	1.18 (11)	1.24 (11)
	24.9 (11)	20.6 (11)	17.2 (11)	14.4 (11)	14.1 (11)	15.5 (11)	16.9 (11)	18.0 (11)
	-.151 (11)	-.438 (11)	-.458 (11)	-.411 (11)	-.439 (11)	-.400 (11)	-.412 (11)	-.373 (11)
6 63-75	2.54 (11)	1.80 (11)	1.33 (11)	.86 (11)	.87 (11)	1.17 (11)	1.39 (11)	1.46 (11)
	24.5 (11)	27.1 (11)	21.8 (11)	14.8 (11)	15.6 (11)	16.4 (11)	17.8 (11)	18.0 (11)
	-.383 (11)	-.495 (11)	-.480 (11)	-.418 (11)	-.387 (11)	-.424 (11)	-.365 (11)	-.395 (11)
7 75-90	2.91 (11)	2.19 (11)	1.59 (11)	1.15 (9)	1.06 (5)	1.36 (11)	1.57 (11)	1.64 (11)
	28.6 (11)	30.3 (11)	22.8 (11)	12.9 (9)	14.5 (5)	13.7 (11)	16.6 (11)	17.3 (11)
	-.399 (11)	-.515 (11)	-.484 (11)	-.674 (9)	-.434 (5)	-.289 (11)	-.379 (11)	-.339 (11)



(d) Solar-zenith-angle bin 4, 45.57° to 53.13°.

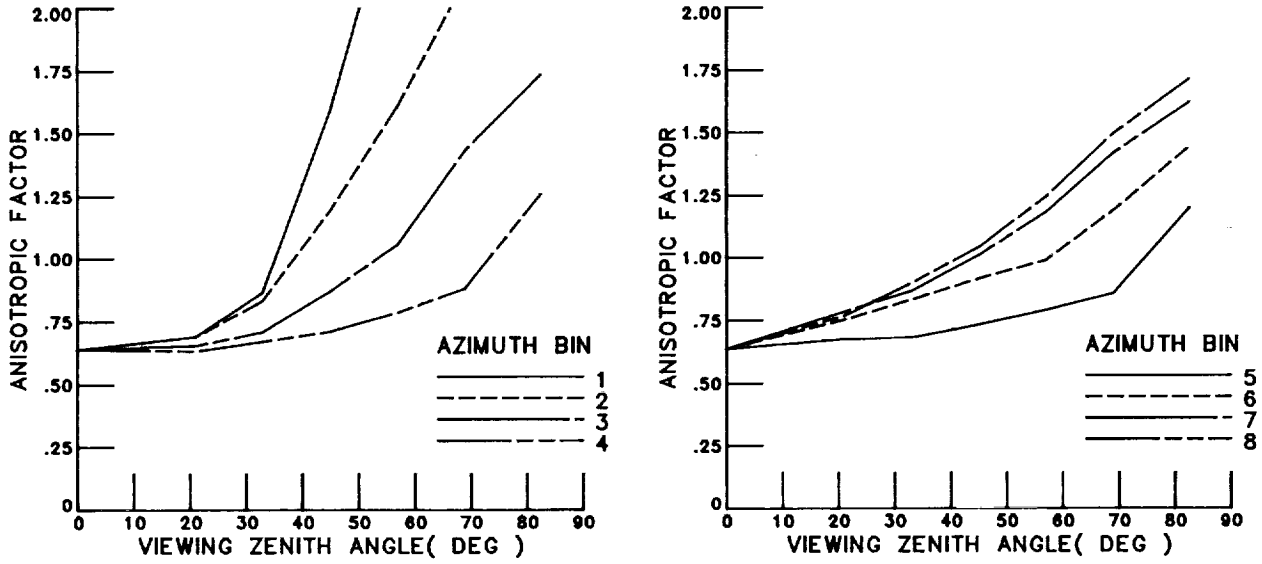
Figure 12. Continued.

SCENE TYPE : PARTLY CLOUDY OVER OCEAN
DATA 1 - SW ANISOTROPIC FACTOR
2 - STANDARD DEVIATION OF SW RADIANCES(W/M**2/SR)
3 - CORRELATION OF LW AND SW RADIANCES
( ) - DATA SOURCE

SUN ZENITH : 53.1 - 60.0
MEAN ALBEDO : .1850 (18)
NORMALIZED ALBEDO : 1.4800 (18)

RELATIVE AZIMUTH

VIEWING ZENITH BIN NO.	ANGLE(DEG.)	1 0-9	2 9-30	3 30-60	4 60-90	5 90-120	6 120-150	7 150-171	8 171-180
1	0-15	.64 (11)	.64 (11)	.64 (11)	.64 (11)	.64 (11)	.64 (11)	.64 (11)	.64 (11)
		12.2 (11)	12.2 (11)	12.2 (11)	12.2 (11)	12.2 (11)	12.2 (11)	12.2 (11)	12.2 (11)
		-.400 (11)	-.400 (11)	-.400 (11)	-.400 (11)	-.400 (11)	-.400 (11)	-.400 (11)	-.400 (11)
2	15-27	.69 (11)	.69 (11)	.66 (11)	.63 (11)	.66 (11)	.75 (11)	.79 (11)	.77 (11)
		13.1 (11)	12.5 (11)	12.2 (11)	11.5 (11)	12.5 (11)	13.5 (11)	13.3 (11)	13.4 (11)
		-.430 (11)	-.447 (11)	-.373 (11)	-.384 (11)	-.377 (11)	-.356 (11)	-.348 (11)	-.338 (11)
3	27-39	.86 (10)	.83 (11)	.71 (11)	.67 (11)	.66 (11)	.83 (11)	.87 (11)	.90 (10)
		11.3 (10)	11.6 (11)	12.2 (11)	12.2 (11)	11.4 (11)	13.6 (11)	12.4 (11)	14.6 (10)
		-.421 (10)	-.431 (11)	-.458 (11)	-.362 (11)	-.411 (11)	-.378 (11)	-.354 (11)	-.352 (10)
4	39-51	1.59 (11)	1.19 (11)	.87 (11)	.71 (11)	.73 (11)	.92 (11)	1.01 (11)	1.04 (11)
		16.7 (11)	16.4 (11)	15.3 (11)	12.7 (11)	12.3 (11)	14.3 (11)	14.7 (11)	16.4 (11)
		-.256 (11)	-.417 (11)	-.467 (11)	-.366 (11)	-.403 (11)	-.397 (11)	-.406 (11)	-.425 (11)
5	51-63	2.52 (11)	1.61 (11)	1.06 (11)	.79 (11)	.79 (11)	.99 (11)	1.18 (11)	1.24 (11)
		36.4 (11)	21.5 (11)	16.5 (11)	12.9 (11)	12.0 (11)	13.1 (11)	14.6 (11)	16.1 (11)
		.086 (11)	-.394 (11)	-.436 (11)	-.376 (11)	-.424 (11)	-.358 (11)	-.393 (11)	-.280 (11)
6	63-75	3.56 (11)	2.11 (11)	1.43 (11)	.88 (10)	.86 (11)	1.19 (11)	1.42 (11)	1.50 (11)
		40.2 (11)	30.3 (11)	21.9 (11)	14.5 (10)	14.2 (11)	14.6 (11)	15.7 (11)	16.7 (11)
		-.142 (11)	-.433 (11)	-.462 (11)	-.328 (10)	-.328 (11)	-.490 (11)	-.376 (11)	-.358 (11)
7	75-90	4.01 (10)	2.63 (11)	1.74 (11)	1.26 (5)	1.20 (5)	1.44 (10)	1.62 (11)	1.71 (11)
		55.3 (10)	32.1 (11)	24.3 (11)	17.7 (5)	15.5 (5)	14.3 (10)	14.7 (11)	15.7 (11)
		-.294 (10)	-.432 (11)	-.487 (11)	-.395 (5)	-.382 (5)	-.409 (10)	-.278 (11)	-.394 (11)



(e) Solar-zenith-angle bin 5, 53.13° to 60.00°.

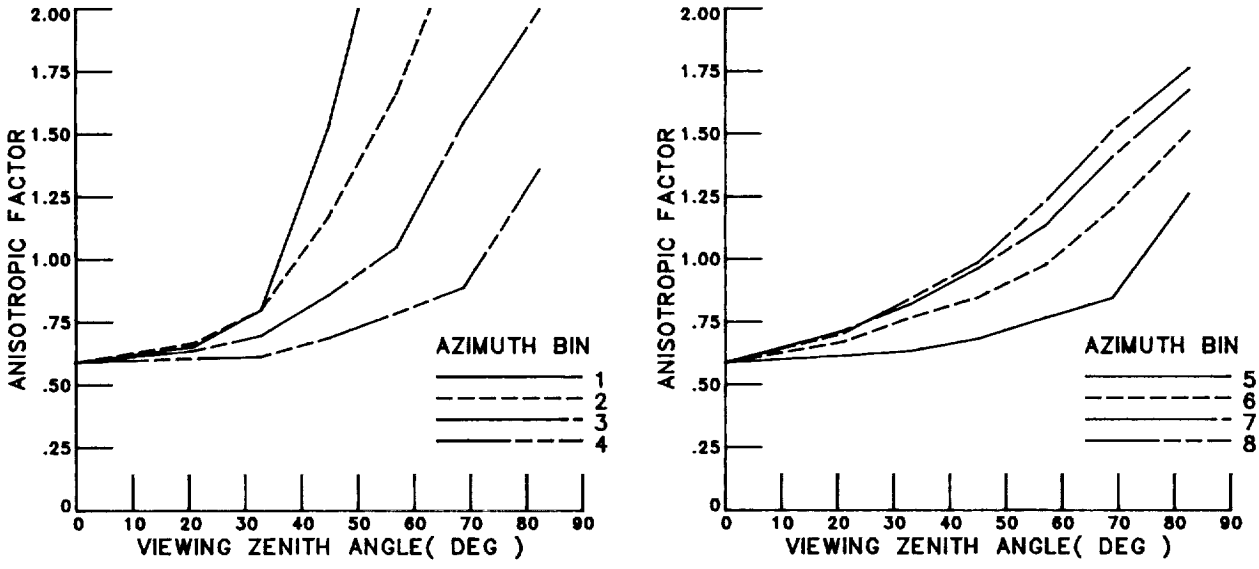
Figure 12. Continued.

SCENE TYPE : PARTLY CLOUDY OVER OCEAN
DATA 1 - SW ANISOTROPIC FACTOR
2 - STANDARD DEVIATION OF SW RADIANCES(W/M**2/SR)
3 - CORRELATION OF LW AND SW RADIANCES
( ) - DATA SOURCE

SUN ZENITH : 60.0 - 66.4
MEAN ALBEDO : .2150 (18)
NORMALIZED ALBEDO : 1.7200 (18)

RELATIVE AZIMUTH

BIN NO. / ANGLE(DEG.)		1 0-9	2 9-30	3 30-60	4 60-90	5 90-120	6 120-150	7 150-171	8 171-180
VIEWING ZENITH BIN NO.	ANGLE(DEG.)								
1	0-15	.59 (11)	.59 (11)	.59 (11)	.59 (11)	.59 (11)	.59 (11)	.59 (11)	.59 (11)
		10.1 (11)	10.1 (11)	10.1 (11)	10.1 (11)	10.1 (11)	10.1 (11)	10.1 (11)	10.1 (11)
		-.430 (11)	-.430 (11)	-.430 (11)	-.430 (11)	-.430 (11)	-.430 (11)	-.430 (11)	-.430 (11)
2	15-27	.65 (11)	.67 (11)	.64 (11)	.60 (11)	.62 (11)	.67 (11)	.72 (11)	.70 (11)
		10.2 (11)	10.4 (11)	11.3 (11)	9.7 (11)	9.6 (11)	10.5 (11)	11.1 (11)	10.6 (11)
		-.446 (11)	-.453 (11)	-.417 (11)	-.419 (11)	-.386 (11)	-.377 (11)	-.403 (11)	-.381 (11)
3	27-39	.80 (10)	.80 (11)	.70 (11)	.61 (11)	.62 (11)	.77 (11)	.82 (11)	.84 (10)
		10.7 (10)	11.1 (11)	10.4 (11)	10.4 (11)	9.2 (11)	11.0 (11)	11.2 (11)	10.9 (10)
		-.469 (10)	-.473 (11)	-.402 (11)	-.469 (11)	-.393 (11)	-.279 (11)	-.397 (11)	-.477 (10)
4	39-51	1.52 (10)	1.17 (11)	.86 (11)	.69 (11)	.68 (11)	.85 (11)	.96 (11)	.99 (11)
		15.4 (10)	14.3 (11)	13.1 (11)	10.7 (11)	10.7 (11)	11.8 (11)	12.1 (11)	12.4 (11)
		-.442 (10)	-.430 (11)	-.474 (11)	-.499 (11)	-.477 (11)	-.407 (11)	-.394 (11)	-.416 (11)
5	51-63	2.60 (10)	1.66 (11)	1.05 (11)	.79 (11)	.77 (11)	.98 (11)	1.13 (11)	1.23 (11)
		30.6 (10)	19.4 (11)	14.9 (11)	11.3 (11)	10.3 (11)	11.9 (11)	12.3 (11)	13.5 (11)
		-.124 (10)	-.383 (11)	-.394 (11)	-.386 (11)	-.346 (11)	-.433 (11)	-.343 (11)	-.375 (11)
6	63-75	4.66 (11)	2.33 (11)	1.55 (11)	.89 (10)	.84 (10)	1.20 (11)	1.41 (11)	1.52 (11)
		63.4 (11)	32.6 (11)	21.5 (11)	14.9 (10)	13.6 (10)	13.3 (11)	13.8 (11)	15.8 (11)
		-.146 (11)	-.470 (11)	-.443 (11)	-.345 (10)	-.306 (10)	-.442 (11)	-.408 (11)	-.459 (11)
7	75-90	5.61 (10)	3.03 (11)	2.00 (10)	1.36 (5)	1.26 (5)	1.51 (10)	1.67 (11)	1.76 (10)
		57.5 (10)	36.2 (11)	25.1 (10)	16.0 (5)	15.2 (5)	13.1 (10)	13.8 (11)	14.4 (10)
		-.030 (10)	-.421 (11)	-.440 (10)	-.363 (5)	-.314 (5)	-.263 (10)	-.356 (11)	-.480 (10)



(f) Solar-zenith-angle bin 6, 60.00° to 66.42°.

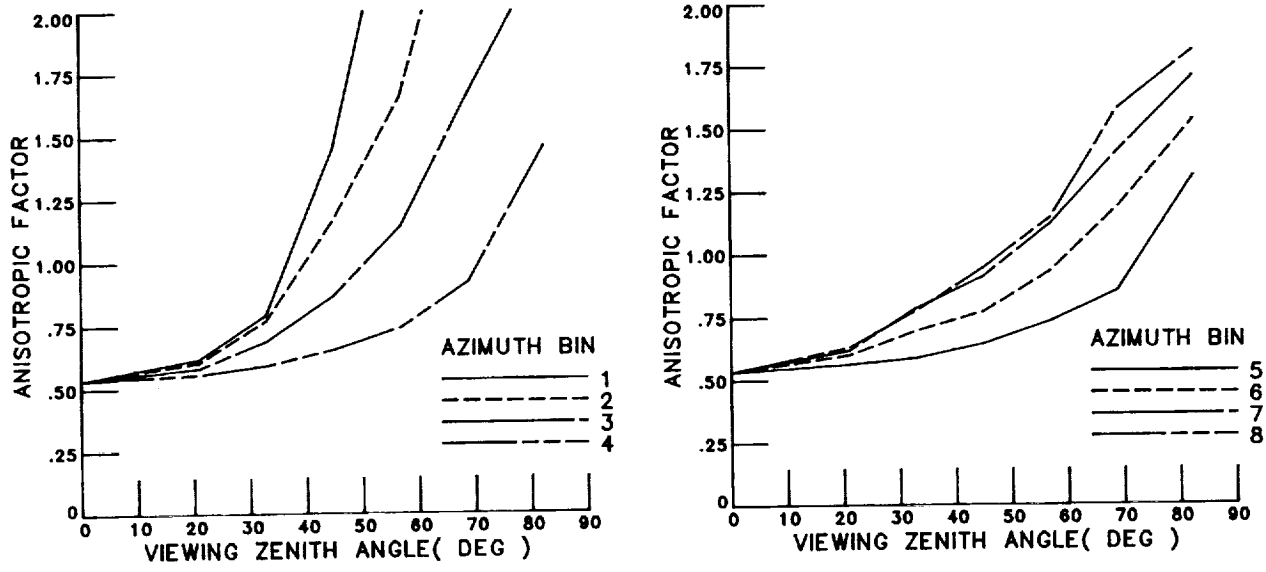
Figure 12. Continued.

SCENE TYPE : PARTLY CLOUDY OVER OCEAN
DATA 1 - SW ANISOTROPIC FACTOR
2 - STANDARD DEVIATION OF SW RADIANCES(W/M**2/SR)
3 - CORRELATION OF LW AND SW RADIANCES
( ) - DATA SOURCE

SUN ZENITH : 66.4 - 72.5
MEAN ALBEDO : .2500 (18)
NORMALIZED ALBEDO : 2.0000 (18)

RELATIVE AZIMUTH

VIEWING ZENITH BIN NO.	BIN NO. / ANGLE(DEG.)	1 0-9	2 9-30	3 30-60	4 60-90	5 90-120	6 120-150	7 150-171	8 171-180
1	0-15	.53 (11)	.53 (11)	.53 (11)	.53 (11)	.53 (11)	.53 (11)	.53 (11)	.53 (11)
		7.4 (11)	7.4 (11)	7.4 (11)	7.4 (11)	7.4 (11)	7.4 (11)	7.4 (11)	7.4 (11)
		-.458 (11)	-.458 (11)	-.458 (11)	-.458 (11)	-.458 (11)	-.458 (11)	-.458 (11)	-.458 (11)
2	15-27	.62 (10)	.60 (10)	.58 (11)	.56 (11)	.56 (11)	.60 (11)	.62 (11)	.63 (10)
		8.5 (10)	7.6 (10)	7.7 (11)	7.4 (11)	7.0 (11)	7.6 (11)	7.4 (11)	8.8 (10)
		-.475 (10)	-.427 (10)	-.482 (11)	-.459 (11)	-.453 (11)	-.440 (11)	-.425 (11)	-.451 (10)
3	27-39	.79 (10)	.77 (10)	.69 (10)	.59 (10)	.59 (10)	.70 (10)	.79 (10)	.78 (10)
		8.1 (10)	8.4 (10)	9.6 (10)	7.0 (10)	7.3 (10)	8.7 (10)	8.7 (10)	7.9 (10)
		-.482 (10)	-.411 (10)	-.434 (10)	-.379 (10)	-.475 (10)	-.473 (10)	-.264 (10)	-.469 (10)
4	39-51	1.45 (10)	1.17 (11)	.87 (11)	.65 (11)	.64 (11)	.77 (11)	.91 (11)	.95 (10)
		12.9 (10)	13.3 (11)	11.6 (11)	8.2 (11)	7.9 (11)	9.3 (11)	9.1 (11)	9.6 (10)
		-.418 (10)	-.399 (11)	-.508 (11)	-.404 (11)	-.516 (11)	-.433 (11)	-.368 (11)	-.463 (10)
5	51-63	2.61 (10)	1.66 (10)	1.14 (10)	.74 (10)	.73 (10)	.93 (10)	1.12 (10)	1.14 (10)
		28.6 (10)	17.9 (10)	13.7 (10)	9.1 (10)	8.8 (10)	9.6 (10)	10.4 (10)	9.3 (10)
		-.195 (10)	-.426 (10)	-.434 (10)	-.426 (10)	-.300 (10)	-.405 (10)	-.441 (10)	-.379 (10)
6	63-75	5.42 (10)	2.63 (11)	1.67 (10)	.92 (10)	.85 (10)	1.19 (10)	1.41 (11)	1.57 (11)
		78.4 (10)	33.1 (11)	21.0 (10)	13.9 (10)	12.0 (10)	12.2 (10)	12.4 (11)	12.5 (11)
		-.030 (10)	-.375 (11)	-.421 (10)	-.332 (10)	-.246 (10)	-.373 (10)	-.449 (11)	-.389 (11)
7	75-90	7.16 (10)	3.50 (10)	2.23 (10)	1.46 (5)	1.31 (5)	1.53 (10)	1.70 (10)	1.81 (10)
		69.8 (10)	40.3 (10)	22.5 (10)	16.8 (5)	14.4 (5)	13.9 (10)	12.1 (10)	12.5 (10)
		.019 (10)	-.353 (10)	-.440 (10)	-.332 (5)	-.235 (5)	-.116 (10)	-.357 (10)	-.315 (10)



(g) Solar-zenith-angle bin 7, 66.42° to 72.54°.

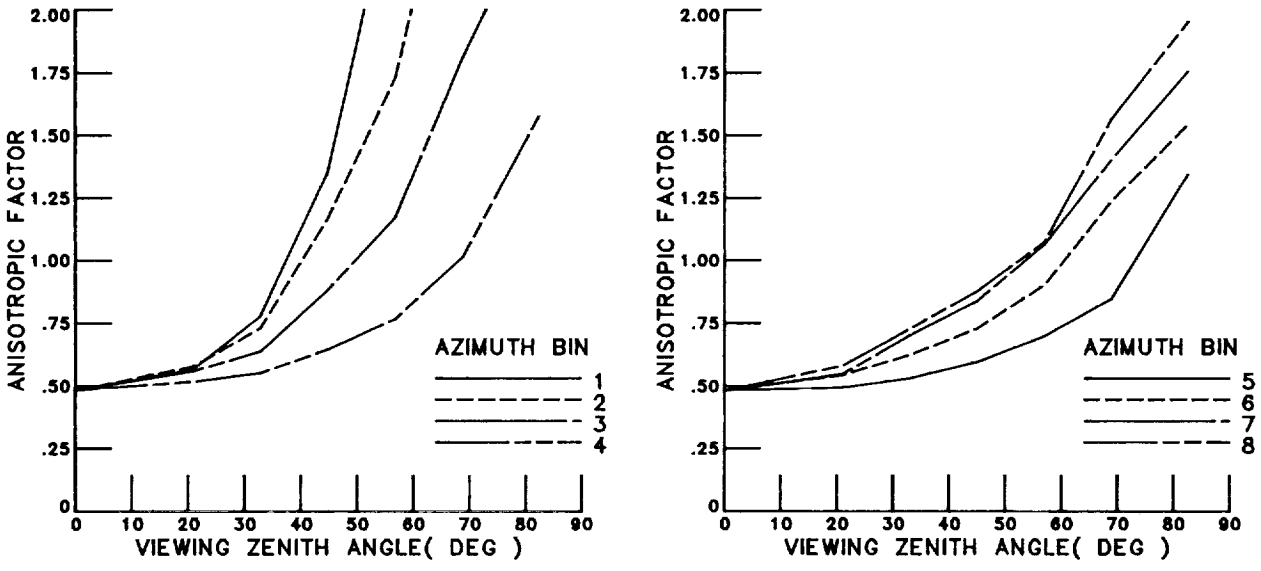
Figure 12. Continued.

SCENE TYPE : PARTLY CLOUDY OVER OCEAN
DATA 1 - SW ANISOTROPIC FACTOR
2 - STANDARD DEVIATION OF SW RADIANCES(W/M**2/SR)
3 - CORRELATION OF LW AND SW RADIANCES
( ) - DATA SOURCE

SUN ZENITH : 72.5 - 78.5
MEAN ALBEDO : .3000 (18)
NORMALIZED ALBEDO : 2.4000 (18)

RELATIVE AZIMUTH

BIN NO.	1	2	3	4	5	6	7	8
ANGLE(DEG.)	0-9	9-30	30-60	60-90	90-120	120-150	150-171	171-180
VIEWING ZENITH BIN NO. ANGLE(DEG.)								
1 0-15	.48 (11)	.48 (11)	.48 (11)	.48 (11)	.48 (11)	.48 (11)	.48 (11)	.48 (11)
	5.0 (11)	5.0 (11)	5.0 (11)	5.0 (11)	5.0 (11)	5.0 (11)	5.0 (11)	5.0 (11)
	-.426 (11)	-.426 (11)	-.426 (11)	-.426 (11)	-.426 (11)	-.426 (11)	-.426 (11)	-.426 (11)
2 15-27	.57 (10)	.58 (10)	.56 (11)	.52 (11)	.49 (11)	.54 (11)	.55 (10)	.58 (10)
	5.8 (10)	5.6 (10)	8.0 (11)	5.8 (11)	5.4 (11)	5.3 (11)	5.3 (10)	6.6 (10)
	-.474 (10)	-.504 (10)	-.366 (11)	-.522 (11)	-.455 (11)	-.383 (11)	-.407 (10)	-.412 (10)
3 27-39	.78 (9)	.73 (10)	.64 (10)	.55 (10)	.53 (10)	.62 (10)	.70 (10)	.73 (9)
	7.1 (9)	6.9 (10)	6.0 (10)	5.3 (10)	5.0 (10)	6.4 (10)	5.9 (10)	6.1 (9)
	-.465 (9)	-.473 (10)	-.406 (10)	-.414 (10)	-.435 (10)	-.483 (10)	-.238 (10)	-.337 (9)
4 39-51	1.35 (10)	1.17 (11)	.86 (10)	.65 (10)	.60 (10)	.73 (10)	.84 (10)	.88 (10)
	10.6 (10)	10.1 (11)	9.2 (10)	6.8 (10)	5.8 (10)	6.7 (10)	6.5 (10)	7.4 (10)
	-.318 (10)	-.368 (11)	-.348 (10)	-.475 (10)	-.595 (10)	-.484 (10)	-.366 (10)	-.340 (10)
5 51-63	2.56 (10)	1.73 (10)	1.17 (10)	.77 (10)	.70 (10)	.90 (10)	1.06 (10)	1.07 (10)
	24.3 (10)	14.5 (10)	11.9 (10)	8.3 (10)	6.0 (10)	7.9 (10)	8.0 (10)	7.5 (10)
	-.249 (10)	-.371 (10)	-.301 (10)	-.295 (10)	-.438 (10)	-.433 (10)	-.455 (10)	-.376 (10)
6 63-75	5.97 (10)	2.86 (10)	1.81 (10)	1.02 (10)	.85 (10)	1.24 (10)	1.41 (11)	1.57 (10)
	80.9 (10)	32.1 (10)	18.3 (10)	14.3 (10)	9.5 (10)	10.8 (10)	9.3 (11)	12.2 (10)
	-.135 (10)	-.416 (10)	-.378 (10)	-.190 (10)	-.124 (10)	-.313 (10)	-.375 (11)	-.336 (10)
7 75-90	8.37 (10)	4.08 (10)	2.44 (10)	1.58 (5)	1.34 (5)	1.54 (10)	1.75 (10)	1.95 (10)
	84.6 (10)	35.4 (10)	24.6 (10)	17.2 (5)	12.4 (5)	10.6 (10)	9.9 (10)	11.3 (10)
	.092 (10)	-.243 (10)	-.113 (10)	-.180 (5)	-.175 (5)	-.282 (10)	-.242 (10)	-.209 (10)



(h) Solar-zenith-angle bin 8, 72.54° to 78.46°.

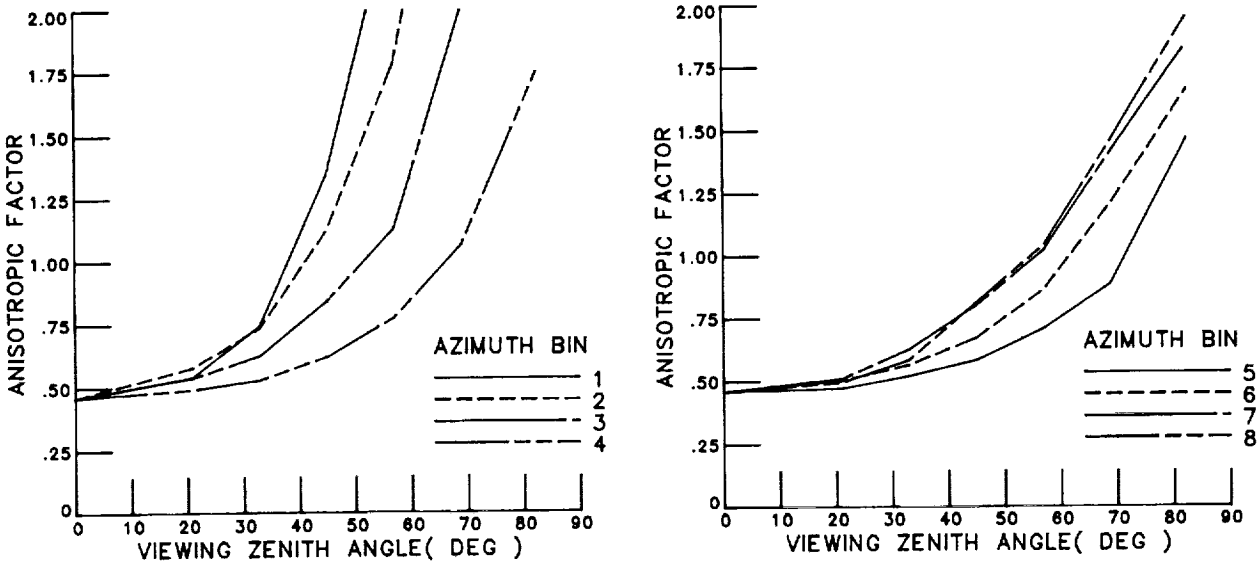
Figure 12. Continued.

SCENE TYPE : PARTLY CLOUDY OVER OCEAN
DATA 1 - SW ANISOTROPIC FACTOR
2 - STANDARD DEVIATION OF SW RADIANCES(W/M**2/SR)
3 - CORRELATION OF LW AND SW RADIANCES
( ) - DATA SOURCE

SUN ZENITH : 78.5 - 84.3
MEAN ALBEDO : .3650 (18)
NORMALIZED ALBEDO : 2.9200 (18)

RELATIVE AZIMUTH

BIN NO. / ANGLE(DEG.)		1 0-9	2 9-30	3 30-60	4 60-90	5 90-120	6 120-150	7 150-171	8 171-180
VIEWING ZENITH BIN NO.	ANGLE(DEG.)								
1	0-15	.46 (11)	.46 (11)	.46 (11)	.46 (11)	.46 (11)	.46 (11)	.46 (11)	.46 (11)
		3.5 (11)	3.5 (11)	3.5 (11)	3.5 (11)	3.5 (11)	3.5 (11)	3.5 (11)	3.5 (11)
		-.331 (11)	-.331 (11)	-.331 (11)	-.331 (11)	-.331 (11)	-.331 (11)	-.331 (11)	-.331 (11)
2	15-27	.54 (10)	.58 (10)	.54 (10)	.49 (10)	.47 (10)	.50 (10)	.51 (10)	.50 (10)
		4.1 (10)	4.8 (10)	3.7 (10)	3.9 (10)	3.6 (10)	3.7 (10)	3.8 (10)	3.6 (10)
		-.587 (10)	-.514 (10)	-.362 (10)	-.446 (10)	-.357 (10)	-.290 (10)	-.240 (10)	-.269 (10)
3	27-39	.74 (9)	.74 (10)	.62 (10)	.53 (10)	.52 (10)	.56 (10)	.63 (10)	.58 (8)
		5.2 (9)	5.1 (10)	4.2 (10)	3.8 (10)	2.9 (10)	3.8 (10)	3.8 (10)	4.2 (8)
		-.317 (9)	-.293 (10)	-.466 (10)	-.546 (10)	-.369 (10)	-.382 (10)	-.200 (10)	-.626 (8)
4	39-51	1.35 (10)	1.12 (10)	.84 (10)	.62 (10)	.58 (10)	.67 (10)	.80 (10)	.81 (10)
		8.3 (10)	7.0 (10)	6.5 (10)	4.0 (10)	3.8 (10)	4.0 (10)	4.5 (10)	4.3 (10)
		-.448 (10)	-.406 (10)	-.380 (10)	-.375 (10)	-.358 (10)	-.352 (10)	-.228 (10)	-.476 (10)
5	51-63	2.40 (10)	1.78 (10)	1.13 (10)	.77 (10)	.71 (10)	.86 (10)	1.02 (10)	1.04 (10)
		14.7 (10)	12.5 (10)	8.1 (10)	4.7 (10)	4.1 (10)	4.5 (10)	5.7 (10)	5.5 (10)
		-.248 (10)	-.367 (10)	-.266 (10)	-.479 (10)	-.318 (10)	-.387 (10)	-.315 (10)	-.407 (10)
6	63-75	6.42 (10)	3.10 (10)	2.00 (10)	1.06 (10)	.89 (9)	1.21 (10)	1.41 (10)	1.46 (10)
		60.6 (10)	22.4 (10)	14.6 (10)	7.2 (10)	5.3 (9)	6.7 (10)	7.4 (10)	6.6 (10)
		-.166 (10)	-.384 (10)	-.334 (10)	-.265 (10)	-.171 (9)	-.318 (10)	-.340 (10)	-.410 (10)
7	75-90	8.93 (9)	4.38 (10)	2.82 (9)	1.75 (5)	1.47 (5)	1.66 (10)	1.84 (10)	1.95 (9)
		54.1 (9)	27.8 (10)	15.4 (9)	9.8 (5)	7.4 (5)	6.6 (10)	7.4 (10)	9.1 (9)
		.079 (9)	-.029 (10)	-.058 (9)	-.131 (5)	-.054 (5)	.123 (10)	-.189 (10)	.202 (9)



(i) Solar-zenith-angle bin 9, 78.46° to 84.26°.

Figure 12. Continued.

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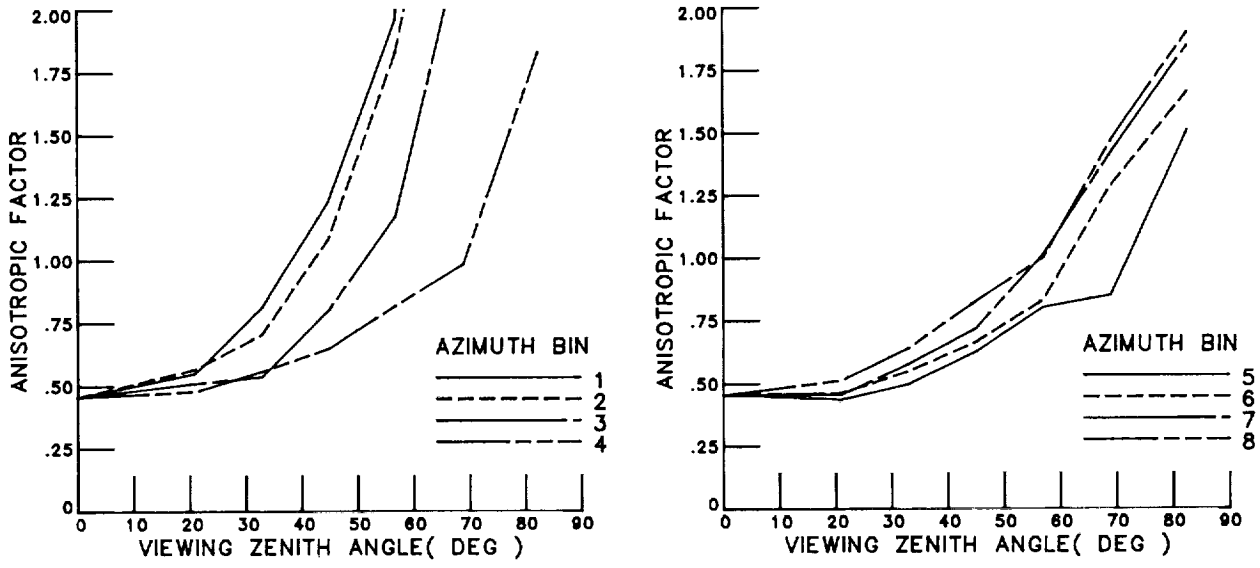
OF POOR QUALITY

SCENE TYPE : PARTLY CLOUDY OVER OCEAN
DATA 1 - SW ANISOTROPIC FACTOR
2 - STANDARD DEVIATION OF SW RADIANCES(W/M**2/SR)
3 - CORRELATION OF LW AND SW RADIANCES
( ) - DATA SOURCE

SUN ZENITH : 84.3 - 90.0
MEAN ALBEDO : .4450 (18)
NORMALIZED ALBEDO : 3.5600 (18)

RELATIVE AZIMUTH

VIEWING ZENITH BIN NO.	VIEWING ZENITH ANGLE(DEG.)	BIN NO. 1 ANGLE(DEG.) 0-9	2 9-30	3 30-60	4 60-90	5 90-120	6 120-150	7 150-171	8 171-180
1	0-15	.45 (10)	.45 (10)	.45 (10)	.45 (10)	.45 (10)	.45 (10)	.45 (10)	.45 (10)
		1.9 (10)	1.9 (10)	1.9 (10)	1.9 (10)	1.9 (10)	1.9 (10)	1.9 (10)	1.9 (10)
		-.436 (10)	-.436 (10)	-.436 (10)	-.436 (10)	-.436 (10)	-.436 (10)	-.436 (10)	-.436 (10)
2	15-27	.55 (8)	.57 (8)	.51 (9)	.48 (10)	.44 (10)	.46 (9)	.46 (8)	.51 (8)
		2.0 (8)	2.8 (8)	1.6 (9)	2.3 (10)	1.6 (10)	1.6 (9)	1.8 (8)	1.8 (8)
		-.655 (8)	-.360 (8)	-.122 (9)	-.117 (10)	-.329 (10)	-.108 (9)	-.306 (8)	-.023 (8)
3	27-39	.81 (7)	.70 (8)	.54 (8)	.56 (8)	.50 (8)	.55 (8)	.58 (8)	.64 (7)
		2.6 (7)	2.0 (8)	1.9 (8)	1.6 (8)	1.6 (8)	1.7 (8)	1.9 (8)	1.1 (7)
		-.091 (7)	-.301 (8)	-.087 (8)	-.573 (8)	-.076 (8)	-.202 (8)	-.519 (8)	-.562 (7)
4	39-51	1.23 (8)	1.09 (9)	.80 (9)	.65 (9)	.63 (9)	.67 (9)	.72 (9)	.83 (7)
		2.7 (8)	2.7 (9)	3.3 (9)	2.0 (9)	2.4 (9)	2.0 (9)	1.8 (9)	2.0 (7)
		-.756 (8)	-.399 (9)	-.327 (9)	-.253 (9)	-.214 (9)	-.356 (9)	-.380 (9)	.138 (7)
5	51-63	1.96 (8)	1.83 (8)	1.18 (8)	.82 (9)	.80 (8)	.83 (8)	1.01 (9)	1.00 (8)
		6.3 (8)	4.8 (8)	3.5 (8)	1.8 (9)	2.3 (8)	1.7 (8)	2.2 (9)	2.4 (8)
		.047 (8)	-.066 (8)	-.556 (8)	-.125 (9)	.172 (8)	.074 (8)	-.216 (9)	-.428 (8)
6	63-75	5.75 (9)	3.10 (10)	2.29 (9)	.98 (9)	.85 (8)	1.29 (10)	1.42 (10)	1.47 (9)
		27.6 (9)	10.1 (10)	7.9 (9)	2.0 (9)	2.5 (8)	3.0 (10)	3.0 (10)	3.1 (9)
		-.274 (9)	-.380 (10)	-.130 (9)	-.100 (9)	-.293 (8)	-.011 (10)	-.192 (10)	-.465 (9)
7	75-90	8.14 (7)	4.70 (9)	3.19 (8)	1.83 (5)	1.51 (5)	1.66 (9)	1.85 (8)	1.90 (8)
		31.5 (7)	14.6 (9)	7.3 (8)	4.2 (5)	4.0 (5)	4.5 (9)	3.5 (8)	2.7 (8)
		-.628 (7)	-.116 (9)	-.066 (8)	-.051 (5)	-.116 (5)	.126 (9)	-.288 (8)	.076 (8)



(j) Solar-zenith-angle bin 10, 84.26° to 90.00°.

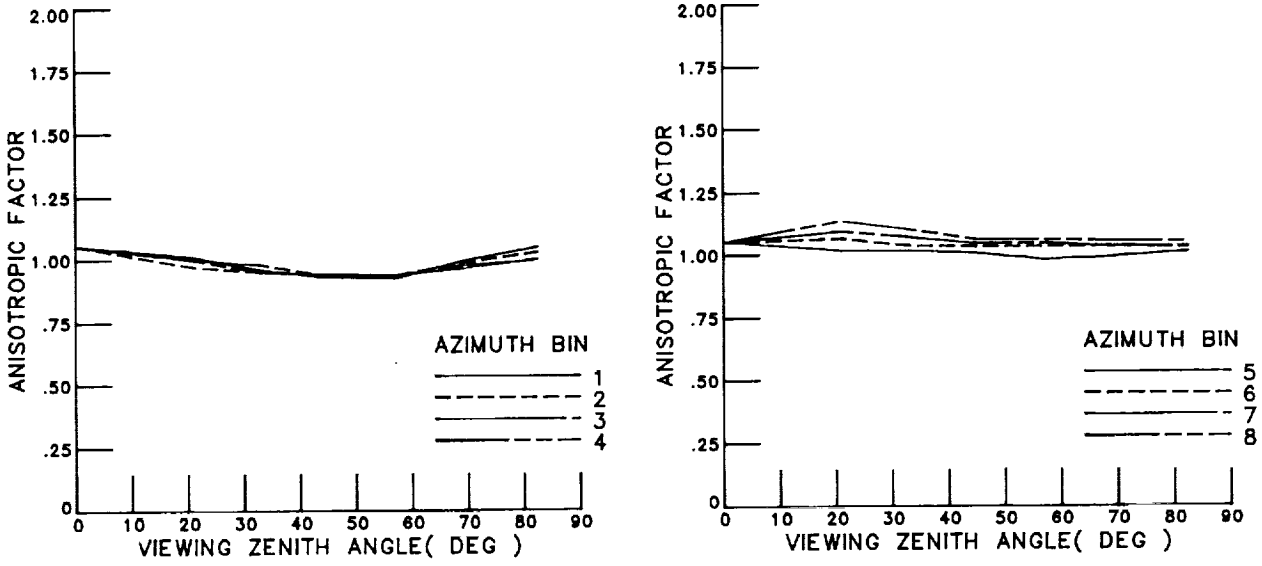
Figure 12. Concluded.

SCENE TYPE : PARTLY CLOUDY OVER LAND OR DESERT
DATA 1 - SW ANISOTROPIC FACTOR
2 - STANDARD DEVIATION OF SW RADIANCES(W/M**2/SR)
3 - CORRELATION OF LW AND SW RADIANCES
( ) - DATA SOURCE

SUN ZENITH : .C - 25.8
MEAN ALBEDO : .2130 (18)
NORMALIZED ALBEDO : 1.0000 (18)

RELATIVE AZIMUTH

BIN NO. / ANGLE(DEG.)		1 0-9	2 9-30	3 30-60	4 60-90	5 90-120	6 120-150	7 150-171	8 171-180
VIEWING ZENITH BIN NO.	ANGLE(DEG.)								
1	0-15	1.05 (11)	1.05 (11)	1.05 (11)	1.05 (11)	1.05 (11)	1.05 (11)	1.05 (11)	1.05 (11)
		24.8 (11)	24.8 (11)	24.8 (11)	24.8 (11)	24.8 (11)	24.8 (11)	24.8 (11)	24.8 (11)
		.095 (11)	.095 (11)	.095 (11)	.095 (11)	.095 (11)	.095 (11)	.095 (11)	.095 (11)
2	15-27	1.01 (11)	.97 (11)	1.00 (11)	1.00 (11)	1.02 (11)	1.07 (11)	1.09 (11)	1.14 (11)
		26.5 (11)	23.8 (11)	24.5 (11)	24.2 (11)	23.8 (11)	24.2 (11)	23.0 (11)	23.8 (11)
		.126 (11)	.067 (11)	.150 (11)	.103 (11)	.110 (11)	.056 (11)	.066 (11)	.094 (11)
3	27-39	.96 (11)	.95 (11)	.95 (11)	.98 (11)	1.02 (11)	1.04 (11)	1.07 (11)	1.10 (11)
		24.5 (11)	23.8 (11)	24.1 (11)	23.6 (11)	23.8 (11)	22.9 (11)	23.0 (11)	24.5 (11)
		.179 (11)	.184 (11)	.156 (11)	.142 (11)	.123 (11)	.119 (11)	.091 (11)	.047 (11)
4	39-51	.93 (11)	.94 (11)	.94 (11)	.93 (11)	1.01 (11)	1.03 (11)	1.05 (11)	1.06 (11)
		24.7 (11)	24.6 (11)	23.4 (11)	23.5 (11)	24.1 (11)	24.0 (11)	23.4 (11)	23.2 (11)
		.049 (11)	.122 (11)	.107 (11)	.178 (11)	.151 (11)	.121 (11)	.071 (11)	.041 (11)
5	51-63	.92 (11)	.93 (11)	.93 (11)	.93 (11)	.98 (11)	1.03 (11)	1.05 (11)	1.06 (11)
		22.7 (11)	22.9 (11)	21.4 (11)	22.1 (11)	22.9 (11)	22.6 (11)	21.6 (11)	22.4 (11)
		.106 (11)	.041 (11)	.130 (11)	.163 (11)	.220 (11)	.196 (11)	.105 (11)	.085 (11)
6	63-75	.99 (11)	.98 (11)	.96 (11)	.97 (11)	.99 (11)	1.03 (11)	1.03 (11)	1.06 (11)
		22.1 (11)	22.3 (11)	20.5 (11)	20.5 (11)	21.6 (11)	21.1 (11)	20.0 (11)	20.3 (11)
		-.183 (11)	-.185 (11)	-.084 (11)	.046 (11)	.034 (11)	.124 (11)	.015 (11)	-.011 (11)
7	75-90	1.05 (10)	1.02 (11)	1.00 (11)	.99 (11)	1.01 (11)	1.03 (11)	1.03 (11)	1.05 (11)
		18.8 (10)	20.5 (11)	20.0 (11)	17.6 (11)	19.0 (11)	17.8 (11)	18.5 (11)	18.5 (11)
		-.241 (10)	-.266 (11)	-.231 (11)	-.022 (11)	-.184 (11)	-.014 (11)	-.154 (11)	-.007 (11)



(a) Solar-zenith-angle bin 1, 0° to 25.84°.

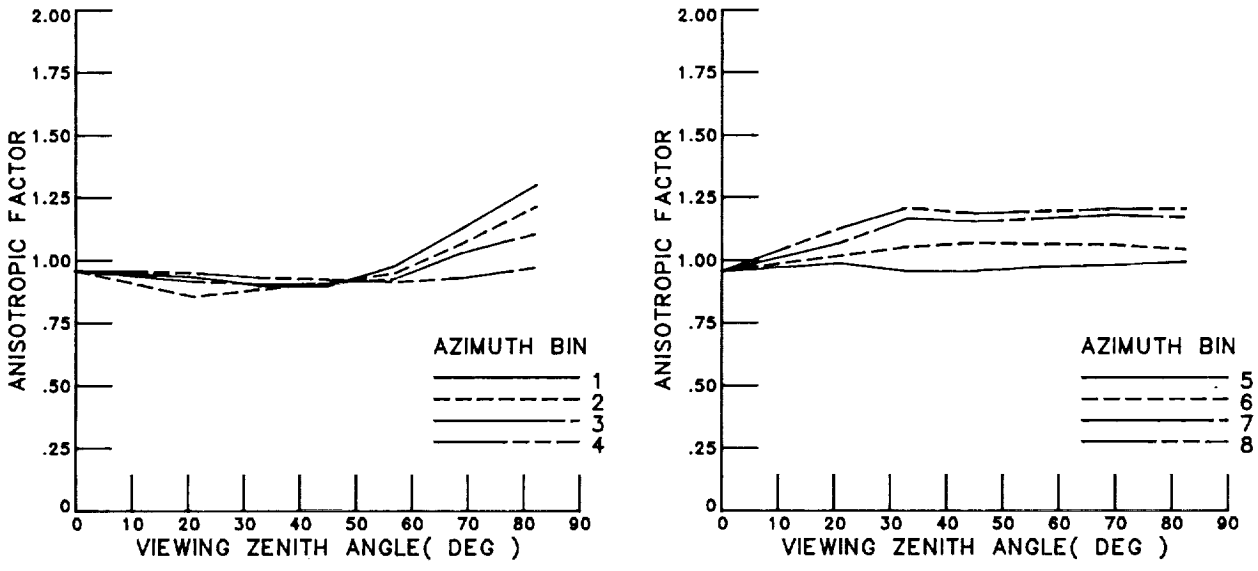
Figure 13. Bidirectional model for partly cloudy over land or desert. (See table 5 for explanation of data sources.)

SCENE TYPE : PARTLY CLOUDY OVER LAND OR DESERT
DATA 1 - SW ANISOTROPIC FACTOR
2 - STANDARD DEVIATION OF SW RADIANCES(W/M**2/SR)
3 - CORRELATION OF LW AND SW RADIANCES
( ) - DATA SOURCE

SUN ZENITH : 25.8 - 36.9
MEAN ALBEDO : .2210 (18)
NORMALIZED ALBEDO : 1.0376 (18)

RELATIVE AZIMUTH

BIN NO. / ANGLE(DEG.)	1 0-9	2 9-30	3 30-60	4 60-90	5 90-120	6 120-150	7 150-171	8 171-180
VIEWING ZENITH BIN NO. ANGLE(DEG.)								
1 0-15	.96 (11)	.96 (11)	.96 (11)	.96 (11)	.96 (11)	.96 (11)	.96 (11)	.96 (11)
	23.0 (11)	23.0 (11)	23.0 (11)	23.0 (11)	23.0 (11)	23.0 (11)	23.0 (11)	23.0 (11)
	-.033 (11)	-.033 (11)	-.033 (11)	-.033 (11)	-.033 (11)	-.033 (11)	-.033 (11)	-.033 (11)
2 15-27	.93 (10)	.85 (11)	.91 (11)	.95 (11)	.99 (11)	1.02 (11)	1.07 (11)	1.13 (11)
	23.4 (10)	20.8 (11)	23.8 (11)	23.9 (11)	23.4 (11)	22.5 (11)	22.5 (11)	23.4 (11)
	-.029 (10)	-.125 (11)	-.038 (11)	-.022 (11)	-.029 (11)	.010 (11)	-.064 (11)	.019 (11)
3 27-39	.90 (10)	.88 (11)	.90 (11)	.93 (11)	.96 (11)	1.05 (11)	1.16 (11)	1.21 (10)
	21.3 (10)	22.5 (11)	23.4 (11)	22.8 (11)	22.3 (11)	22.5 (11)	23.7 (11)	21.1 (10)
	-.166 (10)	-.028 (11)	.043 (11)	.007 (11)	-.066 (11)	.042 (11)	-.028 (11)	-.157 (10)
4 39-51	.90 (11)	.91 (11)	.91 (11)	.92 (11)	.96 (11)	1.07 (11)	1.15 (11)	1.18 (11)
	22.7 (11)	23.2 (11)	21.7 (11)	23.4 (11)	21.6 (11)	23.4 (11)	22.0 (11)	20.8 (11)
	-.183 (11)	-.063 (11)	-.048 (11)	.022 (11)	.052 (11)	.026 (11)	-.011 (11)	.007 (11)
5 51-63	.98 (10)	.95 (11)	.93 (11)	.91 (11)	.97 (11)	1.06 (11)	1.16 (11)	1.19 (11)
	22.5 (10)	21.7 (11)	20.6 (11)	22.2 (11)	20.6 (11)	22.0 (11)	20.2 (11)	20.2 (11)
	-.157 (10)	-.086 (11)	-.090 (11)	.080 (11)	.086 (11)	-.003 (11)	-.032 (11)	.031 (11)
6 63-75	1.13 (11)	1.07 (11)	1.03 (11)	.93 (10)	.98 (11)	1.06 (11)	1.18 (11)	1.20 (11)
	24.7 (11)	22.6 (11)	21.5 (11)	21.8 (10)	20.1 (11)	20.6 (11)	20.0 (11)	19.7 (11)
	-.343 (11)	-.341 (11)	-.245 (11)	-.063 (10)	.056 (11)	.047 (11)	-.027 (11)	-.139 (11)
7 75-90	1.30 (10)	1.21 (11)	1.11 (11)	.97 (10)	.99 (5)	1.04 (8)	1.17 (11)	1.20 (11)
	25.4 (10)	23.4 (11)	20.7 (11)	17.2 (10)	18.1 (5)	15.1 (8)	19.0 (11)	18.7 (11)
	-.232 (10)	-.452 (11)	-.261 (11)	-.121 (10)	-.092 (5)	-.359 (8)	-.050 (11)	-.109 (11)



(b) Solar-zenith-angle bin 2, 25.84° to 36.87°.

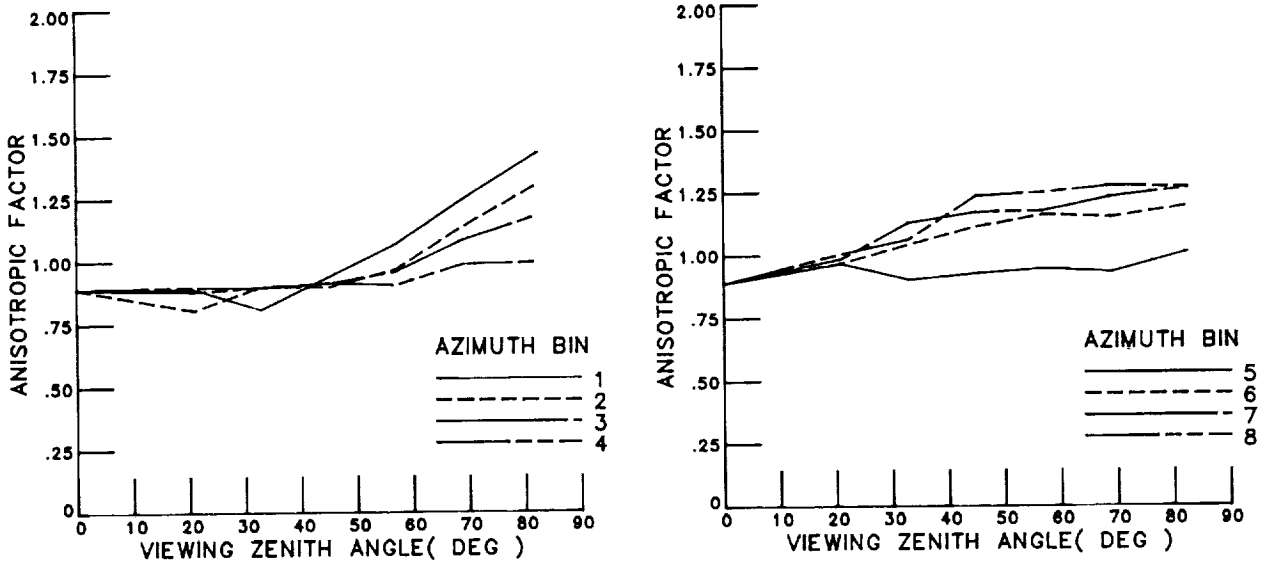
Figure 13. Continued.

SCENE TYPE : PARTLY CLOUDY OVER LAND OR DESERT
DATA 1 - SW ANISOTROPIC FACTOR
2 - STANDARD DEVIATION OF SW RADIANCES(W/M**2/SR)
3 - CORRELATION OF LW AND SW RADIANCES
( ) - DATA SOURCE

SUN ZENITH : 36.5 - 45.6
MEAN ALBEDO : .2300 (18)
NORMALIZED ALBEDO : 1.0798 (18)

RELATIVE AZIMUTH

BIN NO. / ANGLE(DEG.)		1 0-9	2 9-30	3 30-60	4 60-90	5 90-120	6 120-150	7 150-171	8 171-180
VIEWING ZENITH BIN NO.	ANGLE(DEG.)								
1	0-15	.89 (11)	.89 (11)	.89 (11)	.89 (11)	.89 (11)	.89 (11)	.89 (11)	.89 (11)
		26.2 (11)	26.2 (11)	26.2 (11)	26.2 (11)	26.2 (11)	26.2 (11)	26.2 (11)	26.2 (11)
		.055 (11)	.055 (11)	.055 (11)	.055 (11)	.055 (11)	.055 (11)	.055 (11)	.055 (11)
2	15-27	.89 (10)	.90 (11)	.88 (11)	.90 (11)	.97 (11)	.97 (11)	.99 (11)	1.01 (11)
		28.1 (10)	24.7 (11)	26.9 (11)	26.3 (11)	26.3 (11)	26.5 (11)	26.2 (11)	25.6 (11)
		.138 (10)	-.065 (11)	.076 (11)	.102 (11)	.089 (11)	.103 (11)	.182 (11)	.125 (11)
3	27-39	.81 (10)	.90 (11)	.90 (11)	.89 (11)	.90 (11)	1.04 (11)	1.13 (11)	1.06 (10)
		22.6 (10)	27.3 (11)	27.3 (11)	25.9 (11)	23.2 (11)	25.4 (11)	26.8 (11)	23.5 (10)
		-.105 (10)	.038 (11)	.107 (11)	.161 (11)	.049 (11)	.027 (11)	.005 (11)	.098 (10)
4	39-51	.94 (11)	.90 (11)	.91 (11)	.91 (11)	.93 (11)	1.11 (11)	1.17 (11)	1.24 (11)
		30.3 (11)	25.5 (11)	26.9 (11)	25.5 (11)	24.1 (11)	25.7 (11)	25.6 (11)	26.6 (11)
		-.133 (11)	-.036 (11)	-.024 (11)	.084 (11)	.091 (11)	.014 (11)	.020 (11)	.041 (11)
5	51-63	1.07 (10)	.96 (11)	.96 (11)	.90 (11)	.94 (11)	1.16 (11)	1.18 (11)	1.25 (11)
		27.1 (10)	26.1 (11)	26.5 (11)	24.3 (11)	23.5 (11)	25.7 (11)	24.8 (11)	24.6 (11)
		-.211 (10)	-.057 (11)	-.067 (11)	-.006 (11)	.100 (11)	.075 (11)	.023 (11)	.092 (11)
6	63-75	1.24 (11)	1.14 (11)	1.06 (11)	.98 (10)	.93 (11)	1.15 (11)	1.23 (11)	1.27 (11)
		30.3 (11)	26.6 (11)	26.1 (11)	26.1 (10)	22.4 (11)	25.2 (11)	23.5 (11)	23.7 (11)
		-.350 (11)	-.280 (11)	-.188 (11)	-.052 (10)	.049 (11)	-.018 (11)	-.009 (11)	.079 (11)
7	75-90	1.43 (10)	1.30 (11)	1.18 (11)	.99 (9)	1.01 (5)	1.20 (9)	1.26 (11)	1.27 (11)
		29.3 (10)	24.8 (11)	24.1 (11)	18.9 (9)	21.5 (5)	22.2 (9)	22.0 (11)	23.7 (11)
		-.432 (10)	-.332 (11)	-.297 (11)	-.209 (9)	-.081 (5)	-.215 (9)	-.077 (11)	-.045 (11)



(c) Solar-zenith-angle bin 3, 36.87° to 45.57°.

Figure 13. Continued.

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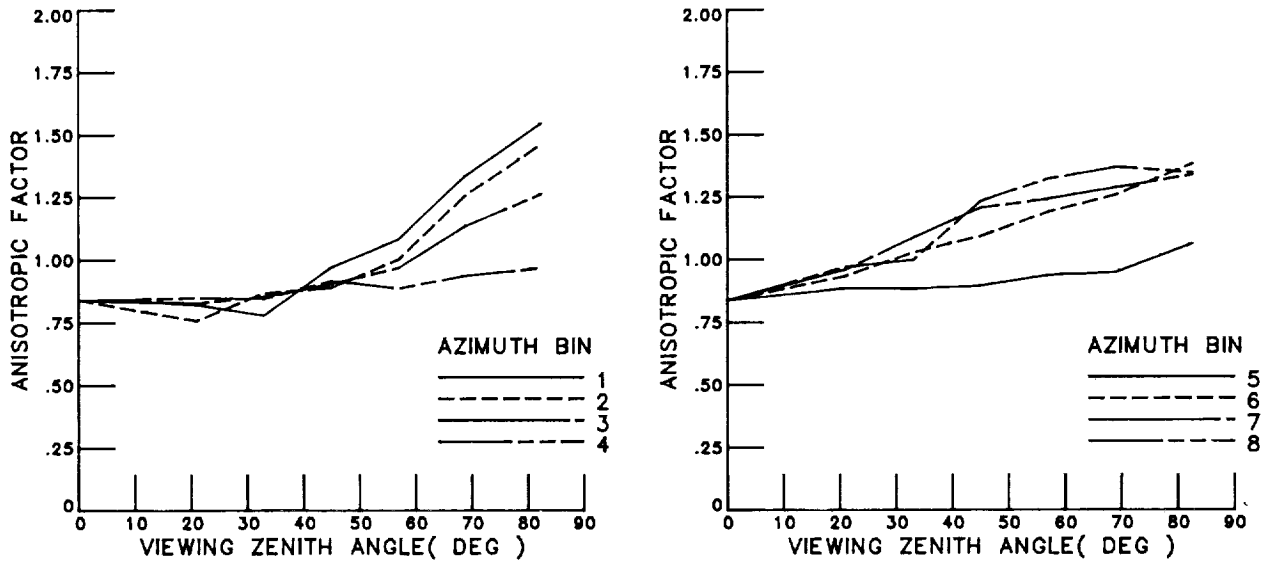
SCENE TYPE : PARTLY CLOUDY OVER LAND OR DESERT
DATA 1 - SW ANISOTROPIC FACTOR
2 - STANDARD DEVIATION OF SW RADIANCES(W/M**2/SR)
3 - CORRELATION OF LW AND SW RADIANCES
( ) - DATA SOURCE

SUN ZENITH : 45.6 - 53.1
MEAN ALBEDO : .2410 (18)
NORMALIZED ALBEDO : 1.1315 (18)

RELATIVE AZIMUTH

BIN NO.	1	2	3	4	5	6	7	8
ANGLE(DEG.)	0-9	9-30	30-60	60-90	90-120	120-150	150-171	171-180
VIEWING ZENITH BIN NO. ANGLE(DEG.)								
1 0-15	.84 (11)	.84 (11)	.84 (11)	.84 (11)	.84 (11)	.84 (11)	.84 (11)	.84 (11)
	21.2 (11)	21.2 (11)	21.2 (11)	21.2 (11)	21.2 (11)	21.2 (11)	21.2 (11)	21.2 (11)
	-.045 (11)	-.045 (11)	-.045 (11)	-.045 (11)	-.045 (11)	-.045 (11)	-.045 (11)	-.045 (11)
2 15-27	.82 (10)	.78 (10)	.83 (11)	.85 (11)	.89 (11)	.93 (11)	.96 (11)	.97 (10)
	21.1 (10)	20.8 (10)	22.5 (11)	22.4 (11)	22.8 (11)	23.6 (11)	22.3 (11)	23.1 (10)
	-.011 (10)	-.100 (10)	-.030 (11)	.004 (11)	-.013 (11)	-.144 (11)	.017 (11)	-.121 (10)
3 27-39	.78 (10)	.87 (10)	.86 (10)	.85 (10)	.88 (10)	1.03 (11)	1.09 (10)	1.00 (10)
	19.3 (10)	22.6 (10)	21.4 (10)	22.0 (10)	22.3 (10)	23.2 (11)	22.4 (10)	19.1 (10)
	-.261 (10)	-.058 (10)	-.015 (10)	.042 (10)	.053 (10)	-.039 (11)	.005 (10)	-.119 (10)
4 39-51	.97 (10)	.89 (11)	.91 (11)	.92 (11)	.90 (11)	1.09 (11)	1.21 (11)	1.23 (10)
	22.1 (10)	22.2 (11)	22.3 (11)	22.8 (11)	21.5 (11)	22.6 (11)	23.5 (11)	23.7 (10)
	-.191 (10)	-.166 (11)	-.080 (11)	.069 (11)	-.020 (11)	-.085 (11)	-.010 (11)	-.090 (10)
5 51-63	1.06 (10)	1.00 (11)	.97 (10)	.89 (11)	.94 (11)	1.19 (10)	1.24 (11)	1.32 (10)
	23.5 (10)	22.6 (11)	23.6 (10)	22.0 (11)	21.1 (11)	23.5 (10)	23.6 (11)	22.9 (10)
	-.246 (10)	-.236 (11)	-.195 (10)	-.095 (11)	-.017 (11)	-.078 (10)	-.051 (11)	-.044 (10)
6 63-75	1.34 (10)	1.26 (11)	1.13 (11)	.94 (10)	.95 (11)	1.26 (11)	1.29 (11)	1.37 (11)
	28.0 (10)	27.1 (11)	24.5 (11)	21.3 (10)	21.4 (11)	21.5 (11)	21.8 (11)	22.3 (11)
	-.441 (10)	-.465 (11)	-.333 (11)	-.120 (10)	-.024 (11)	-.156 (11)	-.072 (11)	-.040 (11)
7 75-90	1.55 (10)	1.46 (10)	1.26 (11)	.97 (7)	1.06 (5)	1.38 (10)	1.34 (11)	1.35 (10)
	32.0 (10)	27.6 (10)	23.3 (11)	17.2 (7)	19.6 (5)	18.4 (10)	19.1 (11)	20.6 (10)
	-.506 (10)	-.475 (10)	-.423 (11)	.031 (7)	-.041 (5)	-.147 (10)	-.077 (11)	-.068 (10)



(d) Solar-zenith-angle bin 4, 45.57° to 53.13°.

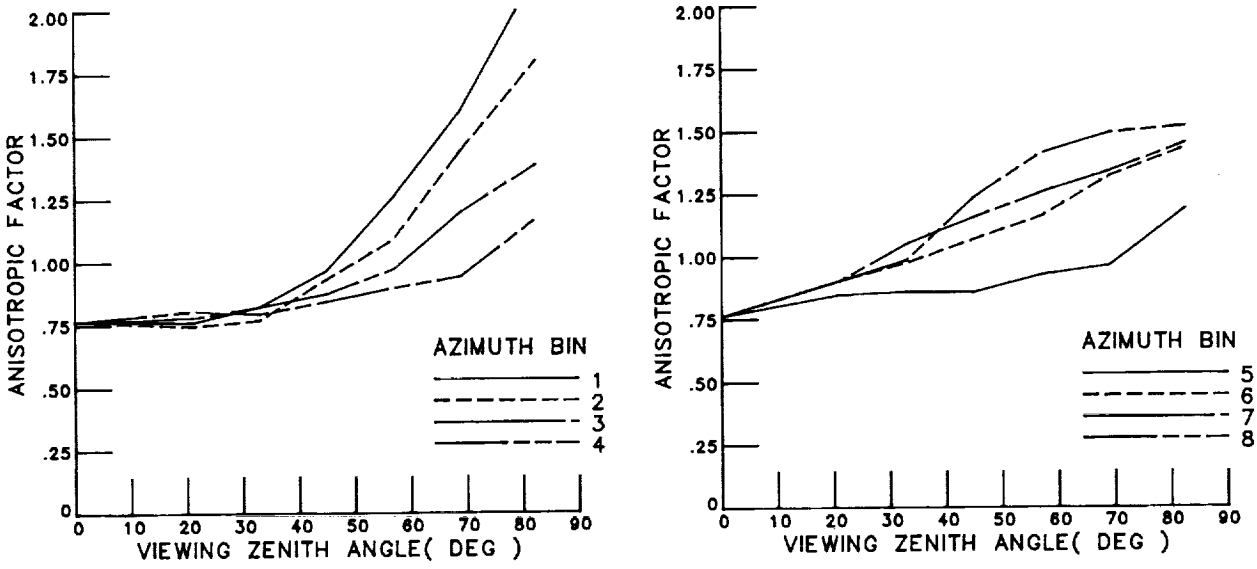
Figure 13. Continued.

SCENE TYPE : PARTLY CLOUDY OVER LAND OR DESERT
DATA 1 - SW ANISOTROPIC FACTOR
2 - STANDARD DEVIATION OF SW RADIANCES(W/M**2/SR)
3 - CORRELATION OF LW AND SW RADIANCES
( ) - DATA SOURCE

SUN ZENITH : 53.1 - 60.0
MEAN ALBEDO : .2540 (18)
NORMALIZED ALBEDO : 1.1925 (18)

RELATIVE AZIMUTH

BIN NO. / VIEWING ZENITH ANGLE(DEG.)		1 0-9	2 9-30	3 30-60	4 60-90	5 90-120	6 120-150	7 150-171	8 171-180
1	0-15	.76 (11)	.76 (11)	.76 (11)	.76 (11)	.76 (11)	.76 (11)	.76 (11)	.76 (11)
		16.1 (11)	16.1 (11)	16.1 (11)	16.1 (11)	16.1 (11)	16.1 (11)	16.1 (11)	16.1 (11)
		-.330 (11)	-.330 (11)	-.330 (11)	-.330 (11)	-.330 (11)	-.330 (11)	-.330 (11)	-.330 (11)
2	15-27	.76 (10)	.74 (10)	.78 (10)	.80 (11)	.85 (11)	.90 (10)	.90 (10)	.90 (10)
		14.6 (10)	16.4 (10)	17.1 (10)	16.1 (11)	17.7 (11)	17.9 (10)	18.1 (10)	15.5 (10)
		-.211 (10)	-.335 (10)	-.386 (10)	-.314 (11)	-.347 (11)	-.330 (10)	-.335 (10)	-.193 (10)
3	27-39	.82 (9)	.77 (10)	.82 (10)	.79 (10)	.86 (10)	.98 (10)	1.05 (10)	.99 (9)
		14.3 (9)	15.4 (10)	16.3 (10)	14.4 (10)	16.8 (10)	17.5 (10)	18.7 (10)	17.3 (9)
		-.297 (9)	-.454 (10)	-.346 (10)	-.263 (10)	-.300 (10)	-.287 (10)	-.267 (10)	-.401 (9)
4	39-51	.96 (10)	.93 (10)	.87 (10)	.84 (10)	.86 (11)	1.07 (10)	1.16 (10)	1.24 (10)
		18.3 (10)	19.7 (10)	18.4 (10)	15.8 (10)	16.4 (11)	17.2 (10)	17.3 (10)	20.4 (10)
		-.393 (10)	-.491 (10)	-.410 (10)	-.370 (10)	-.222 (11)	-.143 (10)	-.174 (10)	-.417 (10)
5	51-63	1.26 (10)	1.09 (10)	.97 (10)	.89 (10)	.93 (10)	1.16 (10)	1.26 (10)	1.41 (10)
		38.4 (10)	20.3 (10)	18.9 (10)	15.8 (10)	16.4 (10)	16.6 (10)	18.2 (10)	19.3 (10)
		-.312 (10)	-.468 (10)	-.343 (10)	-.186 (10)	-.158 (10)	-.243 (10)	-.248 (10)	-.167 (10)
6	63-75	1.60 (10)	1.44 (10)	1.20 (10)	.94 (10)	.96 (10)	1.32 (10)	1.34 (11)	1.49 (10)
		32.7 (10)	31.4 (10)	21.0 (10)	16.8 (10)	17.1 (10)	18.2 (10)	17.2 (11)	18.7 (10)
		-.623 (10)	-.524 (10)	-.541 (10)	-.219 (10)	-.165 (10)	-.284 (10)	-.225 (11)	-.225 (10)
7	75-90	2.14 (9)	1.80 (10)	1.39 (10)	1.17 (5)	1.15 (5)	1.43 (9)	1.45 (10)	1.52 (10)
		40.0 (9)	31.1 (10)	20.9 (10)	18.0 (5)	17.4 (5)	16.1 (9)	17.8 (10)	17.9 (10)
		-.489 (9)	-.514 (10)	-.542 (10)	-.327 (5)	-.248 (5)	-.219 (9)	-.299 (10)	-.181 (10)



(e) Solar-zenith-angle bin 5, 53.13° to 60.00°.

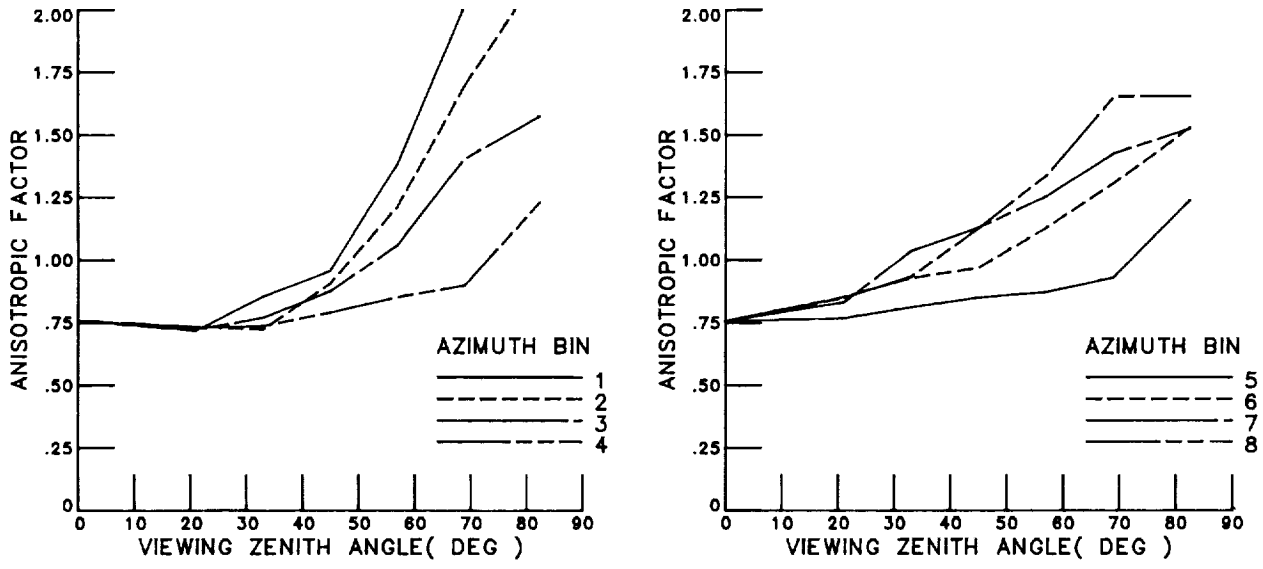
Figure 13. Continued.

SCENE TYPE : PARTLY CLOUDY OVER LAND OR DESERT
DATA 1 - SW ANISOTROPIC FACTOR
2 - STANDARD DEVIATION OF SW RADIANCES(W/M**2/SR)
3 - CORRELATION OF LW AND SW RADIANCES
( ) - DATA SOURCE

SUN ZENITH : 60.0 - 66.4
MEAN ALBEDO : .2750 (18)
NORMALIZED ALBEDO : 1.2911 (18)

RELATIVE AZIMUTH

BIN NO. / ANGLE(DEG.)		1 0-9	2 9-30	3 30-60	4 60-90	5 90-120	6 120-150	7 150-171	8 171-180
VIEWING ZENITH BIN NO.	ANGLE(DEG.)								
1	0-15	.76 (11)	.76 (11)	.76 (11)	.76 (11)	.76 (11)	.76 (11)	.76 (11)	.76 (11)
		11.6 (11)	11.6 (11)	11.6 (11)	11.6 (11)	11.6 (11)	11.6 (11)	11.6 (11)	11.6 (11)
		-.429 (11)	-.429 (11)	-.429 (11)	-.429 (11)	-.429 (11)	-.429 (11)	-.429 (11)	-.429 (11)
2	15-27	.72 (9)	.73 (9)	.72 (10)	.73 (10)	.77 (10)	.85 (10)	.83 (10)	.85 (9)
		12.6 (9)	13.2 (9)	10.7 (10)	11.4 (10)	11.1 (10)	12.7 (10)	12.0 (10)	12.3 (9)
		-.485 (9)	-.497 (9)	-.397 (10)	-.414 (10)	-.457 (10)	-.391 (10)	-.443 (10)	-.470 (9)
3	27-39	.65 (8)	.72 (9)	.77 (10)	.74 (10)	.81 (9)	.93 (10)	1.04 (10)	.93 (8)
		14.3 (8)	11.4 (9)	10.4 (10)	11.6 (10)	10.1 (9)	13.4 (10)	14.1 (10)	10.4 (8)
		-.568 (8)	-.280 (9)	-.502 (10)	-.439 (10)	-.361 (9)	-.554 (10)	-.449 (10)	-.160 (8)
4	39-51	.96 (9)	.91 (10)	.88 (10)	.79 (10)	.85 (10)	.97 (10)	1.13 (10)	1.13 (10)
		17.0 (9)	14.1 (10)	12.8 (10)	12.3 (10)	12.6 (10)	12.5 (10)	14.2 (10)	12.8 (10)
		-.474 (9)	-.471 (10)	-.543 (10)	-.409 (10)	-.492 (10)	-.406 (10)	-.351 (10)	-.440 (10)
5	51-63	1.38 (9)	1.21 (9)	1.06 (9)	.85 (10)	.87 (10)	1.13 (9)	1.25 (10)	1.34 (9)
		26.8 (9)	21.4 (9)	16.9 (9)	11.9 (10)	10.2 (10)	13.2 (9)	12.9 (10)	13.7 (9)
		-.578 (9)	-.559 (9)	-.446 (9)	-.508 (10)	-.437 (10)	-.378 (9)	-.324 (10)	-.392 (9)
6	63-75	2.02 (9)	1.70 (10)	1.41 (10)	.90 (10)	.93 (10)	1.31 (10)	1.43 (10)	1.65 (10)
		32.9 (9)	32.3 (10)	22.1 (10)	11.5 (10)	10.9 (10)	13.1 (10)	13.3 (10)	14.7 (10)
		-.497 (9)	-.575 (10)	-.557 (10)	-.611 (10)	-.511 (10)	-.365 (10)	-.367 (10)	-.406 (10)
7	75-90	2.54 (8)	2.15 (10)	1.58 (9)	1.23 (5)	1.24 (5)	1.53 (8)	1.53 (10)	1.65 (9)
		41.6 (8)	39.9 (10)	26.6 (9)	16.3 (5)	13.2 (5)	9.8 (8)	14.0 (10)	14.3 (9)
		-.655 (8)	-.524 (10)	-.455 (9)	-.540 (5)	-.498 (5)	-.499 (8)	-.361 (10)	-.298 (9)



(f) Solar-zenith-angle bin 6, 60.00° to 66.42°.

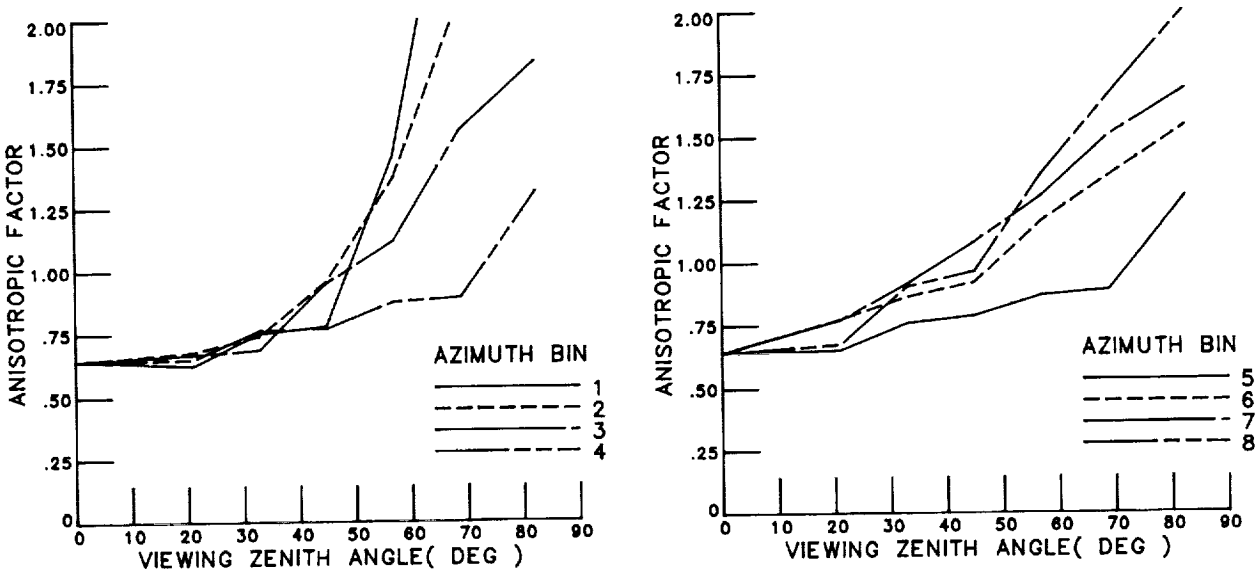
Figure 13. Continued.

SCENE TYPE : PARTLY CLOUDY OVER LAND OR DESERT
DATA 1 - SW ANISOTROPIC FACTOR
2 - STANDARD DEVIATION OF SW RADIANCES(W/M**2/SR)
3 - CORRELATION OF LW AND SW RADIANCES
( ) - DATA SOURCE

SUN ZENITH : 66.4 - 72.5
MEAN ALBEDO : .3C10 (18)
NORMALIZED ALBEDO : 1.4131 (18)

RELATIVE AZIMUTH

BIN NO. / ANGLE(DEG.)		1 0-9	2 9-30	3 30-60	4 60-90	5 90-120	6 120-150	7 150-171	8 171-180
VIEWING ZENITH BIN NO.	ANGLE(DEG.)								
1	0-15	.64 (10)	.64 (10)	.64 (10)	.64 (10)	.64 (10)	.64 (10)	.64 (10)	.64 (10)
		8.7 (10)	8.7 (10)	8.7 (10)	8.7 (10)	8.7 (10)	8.7 (10)	8.7 (10)	8.7 (10)
		-.487 (10)	-.487 (10)	-.487 (10)	-.487 (10)	-.487 (10)	-.487 (10)	-.487 (10)	-.487 (10)
2	15-27	.62 (8)	.68 (8)	.67 (8)	.65 (9)	.65 (9)	.77 (8)	.77 (8)	.67 (8)
		8.7 (8)	10.9 (8)	10.0 (8)	9.0 (9)	6.6 (9)	7.2 (8)	7.6 (8)	6.9 (8)
		-.566 (8)	-.739 (8)	-.297 (8)	-.401 (9)	-.516 (9)	-.086 (8)	-.531 (8)	-.260 (8)
3	27-39	.75 (7)	.74 (8)	.69 (8)	.76 (8)	.76 (8)	.86 (8)	.91 (8)	.90 (7)
		11.6 (7)	9.9 (8)	7.4 (8)	12.3 (8)	6.1 (8)	12.7 (8)	8.1 (8)	11.1 (7)
		-.900 (15)	-.312 (8)	-.591 (8)	-.338 (8)	-.752 (8)	-.562 (8)	-.241 (8)	-.525 (7)
4	39-51	.78 (7)	.96 (8)	.95 (8)	.77 (9)	.79 (9)	.92 (9)	1.08 (9)	.96 (8)
		10.4 (7)	15.5 (8)	13.8 (8)	9.4 (9)	7.5 (9)	9.3 (9)	13.7 (9)	7.1 (8)
		-.173 (7)	-.469 (8)	-.712 (8)	-.634 (9)	-.336 (9)	-.370 (9)	-.570 (9)	.060 (8)
5	51-63	1.46 (7)	1.37 (8)	1.12 (7)	.87 (9)	.87 (9)	1.16 (8)	1.26 (8)	1.35 (7)
		21.6 (7)	21.5 (8)	12.7 (7)	11.9 (9)	9.7 (9)	11.6 (8)	10.9 (8)	10.1 (7)
		-.201 (7)	-.569 (8)	-.083 (7)	-.504 (9)	-.528 (9)	-.464 (8)	-.528 (8)	-.304 (7)
6	63-75	2.80 (6)	2.07 (9)	1.56 (8)	.89 (9)	.89 (9)	1.34 (9)	1.50 (10)	1.67 (8)
		35.4 (8)	35.7 (9)	22.0 (8)	9.4 (9)	8.4 (9)	10.9 (9)	10.7 (10)	13.3 (8)
		-.448 (8)	-.469 (9)	-.412 (8)	-.566 (9)	-.655 (9)	-.528 (9)	-.431 (10)	-.352 (8)
7	75-90	2.54 (7)	2.67 (8)	1.83 (8)	1.31 (5)	1.26 (5)	1.54 (8)	1.69 (9)	2.01 (7)
		36.0 (7)	24.6 (8)	23.4 (8)	14.1 (5)	11.4 (5)	9.7 (8)	10.9 (9)	8.8 (7)
		-.375 (7)	-.396 (8)	-.384 (6)	-.485 (5)	-.537 (5)	-.437 (8)	-.580 (9)	-.405 (7)



(g) Solar-zenith-angle bin 7, 66.42° to 72.54°.

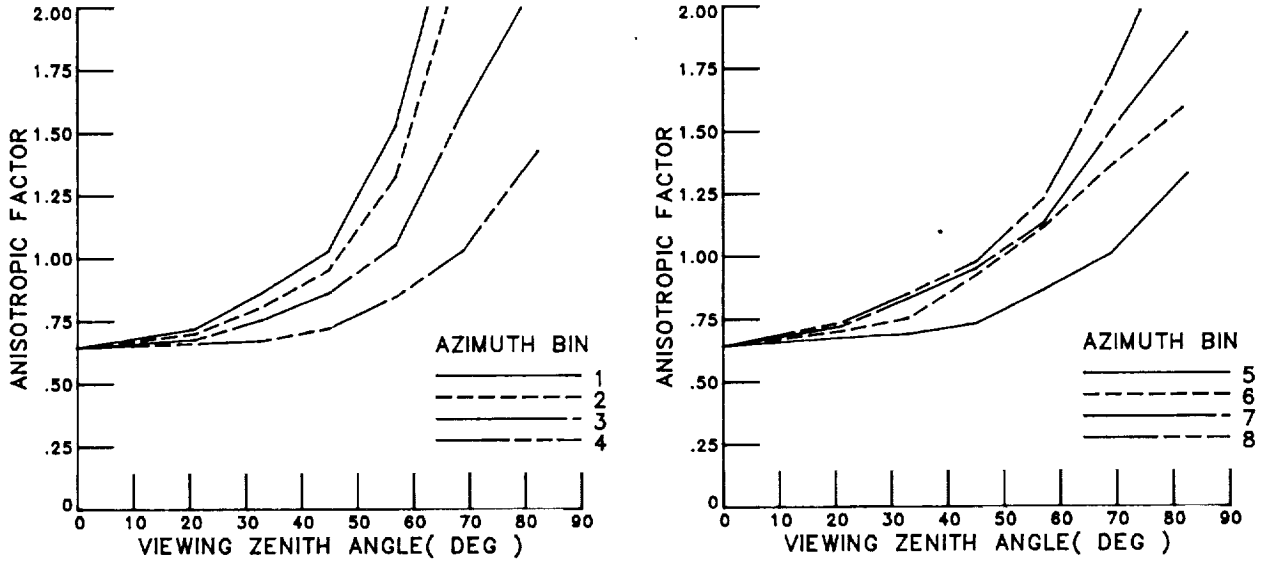
Figure 13. Continued.

SCENE TYPE : PARTLY CLOUDY OVER LAND OR DESERT
DATA 1 - SW ANISOTROPIC FACTOR
2 - STANDARD DEVIATION OF SW RADIANCES(W/M**2/SR)
3 - CORRELATION OF LW AND SW RADIANCES
( ) - DATA SOURCE

SUN ZENITH : 72.5 - 78.5
MEAN ALBEDO : .3400 (18)
NORMALIZED ALBEDO : 1.5562 (18)

RELATIVE AZIMUTH

BIN NO. / ANGLE(DEG.)		1 0-9	2 9-30	3 30-60	4 60-90	5 90-120	6 120-150	7 150-171	8 171-180
VIEWING ZENITH BIN NO.	ANGLE(DEG.)								
1	0-15	.64 (12) 7.0 (13) .000 (0)	.64 (12) 7.0 (13) .000 (0)	.64 (12) 7.0 (13) .000 (0)	.64 (12) 7.0 (13) .000 (0)	.64 (12) 7.0 (13) .000 (0)	.64 (12) 7.0 (13) .000 (0)	.64 (12) 7.0 (13) .000 (0)	.64 (12) 7.0 (13) .000 (0)
2	15-27	.72 (12) 8.1 (13) .000 (0)	.70 (12) 9.1 (13) .000 (0)	.68 (12) 8.2 (13) .000 (0)	.66 (12) 7.4 (13) .000 (0)	.68 (12) 5.5 (13) .000 (0)	.70 (12) 5.3 (13) .000 (0)	.72 (12) 5.8 (13) .000 (0)	.74 (12) 6.1 (13) .000 (0)
3	27-39	.86 (12) 10.9 (13) .000 (0)	.81 (12) 8.7 (13) .000 (0)	.76 (12) 6.6 (13) .000 (0)	.67 (12) 8.7 (13) .000 (0)	.69 (12) 4.5 (13) .000 (0)	.75 (12) 8.9 (13) .000 (0)	.83 (12) 5.9 (13) .000 (0)	.85 (12) 8.5 (13) .000 (0)
4	39-51	1.03 (12) 11.1 (13) .000 (0)	.95 (12) 12.5 (13) .000 (0)	.86 (12) 10.1 (13) .000 (0)	.72 (12) 7.1 (13) .000 (0)	.73 (12) 5.6 (13) .000 (0)	.92 (12) 7.5 (13) .000 (0)	.95 (12) 9.7 (13) .000 (0)	.98 (12) 5.8 (13) .000 (0)
5	51-63	1.53 (12) 16.2 (13) .000 (0)	1.32 (12) 16.8 (13) .000 (0)	1.05 (12) 9.7 (13) .000 (0)	.85 (12) 9.3 (13) .000 (0)	.87 (12) 7.6 (13) .000 (0)	1.11 (12) 8.9 (13) .000 (0)	1.13 (12) 7.9 (13) .000 (0)	1.23 (12) 7.4 (13) .000 (0)
6	63-75	2.52 (12) 25.6 (13) .000 (0)	2.21 (12) 30.7 (13) .000 (0)	1.59 (12) 16.1 (13) .000 (0)	1.03 (12) 8.8 (13) .000 (0)	1.01 (12) 7.7 (13) .000 (0)	1.36 (12) 8.9 (13) .000 (0)	1.50 (12) 8.6 (13) .000 (0)	1.72 (12) 11.1 (13) .000 (0)
7	75-90	4.64 (12) 30.5 (13) .000 (0)	3.23 (12) 24.0 (13) .000 (0)	2.12 (12) 21.8 (13) .000 (0)	1.43 (12) 12.4 (13) .000 (0)	1.33 (12) 9.6 (13) .000 (0)	1.61 (12) 8.2 (13) .000 (0)	1.89 (12) 9.8 (13) .000 (0)	2.38 (12) 8.5 (13) .000 (0)



(h) Solar-zenith-angle bin 8, 72.54° to 78.46°.

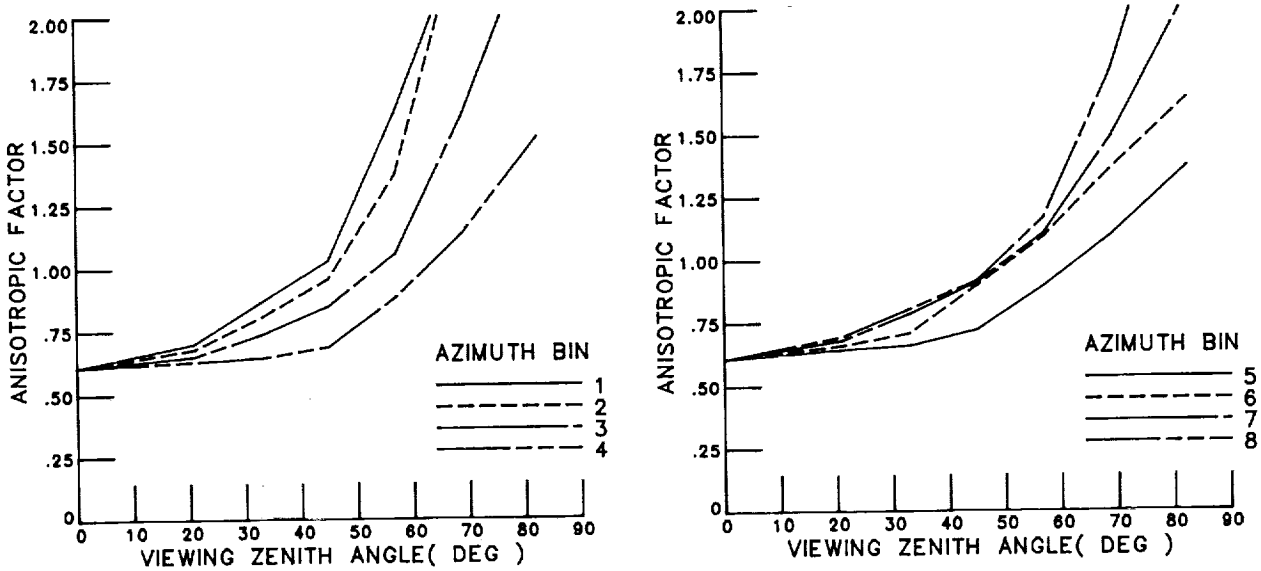
Figure 13. Continued.

SCENE TYPE : PARTLY CLOUDY OVER LAND OR DESERT
DATA 1 - SW ANISOTROPIC FACTOR
2 - STANDARD DEVIATION OF SW RADIANCES(W/M**2/SR)
3 - CORRELATION OF LW AND SW RADIANCES
( ) - DATA SOURCE

SUN ZENITH : 78.5 - 84.3
MEAN ALBEDO : .3780 (18)
NORMALIZED ALBEDO : 1.7746 (18)

RELATIVE AZIMUTH

BIN NO. / ANGLE(DEG.)		1 0-9	2 9-30	3 30-60	4 60-90	5 90-120	6 120-150	7 150-171	8 171-180
VIEWING ZENITH BIN NO.	ANGLE(DEG.)								
1	0-15	.61 (12) 4.6 (13) .000 (0)	.61 (12) 4.6 (13) .000 (0)	.61 (12) 4.6 (13) .000 (0)	.61 (12) 4.6 (13) .000 (0)	.61 (12) 4.6 (13) .000 (0)	.61 (12) 4.6 (13) .000 (0)	.61 (12) 4.6 (13) .000 (0)	.61 (12) 4.6 (13) .000 (0)
2	15-27	.70 (12) 5.5 (13) .000 (0)	.68 (12) 6.1 (13) .000 (0)	.65 (12) 5.5 (13) .000 (0)	.63 (12) 4.9 (13) .000 (0)	.64 (12) 3.7 (13) .000 (0)	.66 (12) 3.4 (13) .000 (0)	.68 (12) 3.8 (13) .000 (0)	.69 (12) 4.0 (13) .000 (0)
3	27-39	.86 (12) 7.6 (13) .000 (0)	.80 (12) 6.1 (13) .000 (0)	.74 (12) 4.5 (13) .000 (0)	.64 (12) 3.8 (13) .000 (0)	.66 (12) 3.0 (13) .000 (0)	.71 (12) 5.9 (13) .000 (0)	.78 (12) 3.9 (13) .000 (0)	.80 (12) 5.6 (13) .000 (0)
4	39-51	1.03 (12) 7.7 (13) .000 (0)	.96 (12) 8.7 (13) .000 (0)	.85 (12) 6.9 (13) .000 (0)	.69 (12) 4.7 (13) .000 (0)	.72 (12) 3.9 (13) .000 (0)	.90 (12) 5.1 (13) .000 (0)	.91 (12) 6.5 (13) .000 (0)	.92 (12) 3.8 (13) .000 (0)
5	51-63	1.62 (12) 13.5 (13) .000 (0)	1.37 (12) 12.1 (13) .000 (0)	1.06 (12) 6.7 (13) .000 (0)	.88 (12) 6.7 (13) .000 (0)	.85 (12) 5.6 (13) .000 (0)	1.09 (12) 6.1 (13) .000 (0)	1.10 (12) 5.4 (13) .000 (0)	1.16 (12) 4.9 (13) .000 (0)
6	63-75	2.29 (12) 16.2 (13) .000 (0)	2.32 (12) 22.5 (13) .000 (0)	1.60 (12) 12.7 (13) .000 (0)	1.13 (12) 6.7 (13) .000 (0)	1.10 (12) 5.9 (13) .000 (0)	1.36 (12) 6.2 (13) .000 (0)	1.49 (12) 6.0 (13) .000 (0)	1.75 (12) 7.9 (13) .000 (0)
7	75-90	2.67 (12) 21.6 (13) .000 (0)	3.68 (12) 19.1 (13) .000 (0)	2.35 (12) 16.9 (13) .000 (0)	1.52 (12) 9.2 (13) .000 (0)	1.37 (12) 6.9 (13) .000 (0)	1.64 (12) 5.8 (13) .000 (0)	2.05 (12) 7.4 (13) .000 (0)	2.69 (12) 6.7 (13) .000 (0)



(i) Solar-zenith-angle bin 9, 78.46° to 84.26°.

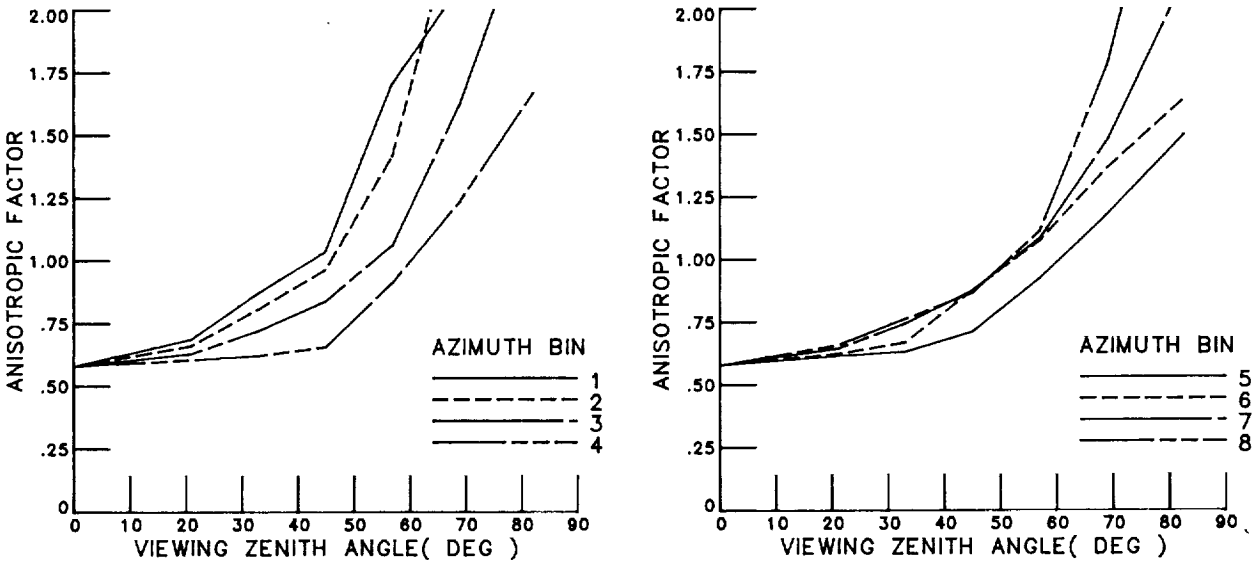
Figure 13. Continued.

SCENE TYPE : PARTLY CLOUDY OVER LAND OR DESERT
DATA 1 - SW ANISOTROPIC FACTOR
2 - STANDARD DEVIATION OF SW RADIANCES(W/M**2/SR)
3 - CORRELATION OF LW AND SW RADIANCES
( ) - DATA SOURCE

SUN ZENITH : 84.3 - 90.0
MEAN ALBEDO : .4285 (18)
NORMALIZED ALBEDO : 2.0117 (18)

RELATIVE AZIMUTH

VIEWING ZENITH BIN NO.	BIN NO. / ANGLE(DEG.)	1 0-9	2 9-30	3 30-60	4 60-90	5 90-120	6 120-150	7 150-171	8 171-180
1	0-15	.56 (12)	.58 (12)	.58 (12)	.58 (12)	.58 (12)	.58 (12)	.58 (12)	.58 (12)
		1.7 (13)	1.7 (13)	1.7 (13)	1.7 (13)	1.7 (13)	1.7 (13)	1.7 (13)	1.7 (13)
		.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)
2	15-27	.69 (12)	.66 (12)	.63 (12)	.61 (12)	.62 (12)	.62 (12)	.65 (12)	.66 (12)
		2.1 (13)	2.3 (13)	2.0 (13)	1.8 (13)	1.3 (13)	1.2 (13)	1.4 (13)	1.4 (13)
		.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)
3	27-39	.87 (12)	.81 (12)	.72 (12)	.62 (12)	.63 (12)	.67 (12)	.74 (12)	.76 (12)
		2.9 (13)	2.3 (13)	1.7 (13)	2.2 (13)	1.1 (13)	2.1 (13)	1.4 (13)	2.0 (13)
		.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)
4	39-51	1.03 (12)	.96 (12)	.84 (12)	.66 (12)	.71 (12)	.88 (12)	.88 (12)	.87 (12)
		3.0 (13)	3.4 (13)	2.6 (13)	1.7 (13)	1.5 (13)	1.9 (13)	2.4 (13)	1.4 (13)
		.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)
5	51-63	1.71 (12)	1.42 (12)	1.06 (12)	.91 (12)	.92 (12)	1.07 (12)	1.08 (12)	1.11 (12)
		5.4 (13)	4.8 (13)	2.6 (13)	2.7 (13)	2.2 (13)	2.3 (13)	2.0 (13)	1.8 (13)
		.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)
6	63-75	2.09 (12)	2.42 (12)	1.62 (12)	1.23 (12)	1.18 (12)	1.37 (12)	1.48 (12)	1.78 (12)
		5.7 (13)	9.0 (13)	4.9 (13)	2.8 (13)	2.4 (13)	2.4 (13)	2.3 (13)	3.1 (13)
		.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)
7	75-90	2.00 (12)	3.93 (12)	2.45 (12)	1.68 (12)	1.50 (12)	1.64 (12)	2.11 (12)	2.97 (12)
		6.2 (13)	7.8 (13)	6.7 (13)	3.9 (13)	2.5 (13)	2.2 (13)	2.9 (13)	2.8 (13)
		.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)	.000 (0)



(j) Solar-zenith-angle bin 10, 84.26° to 90.00°.

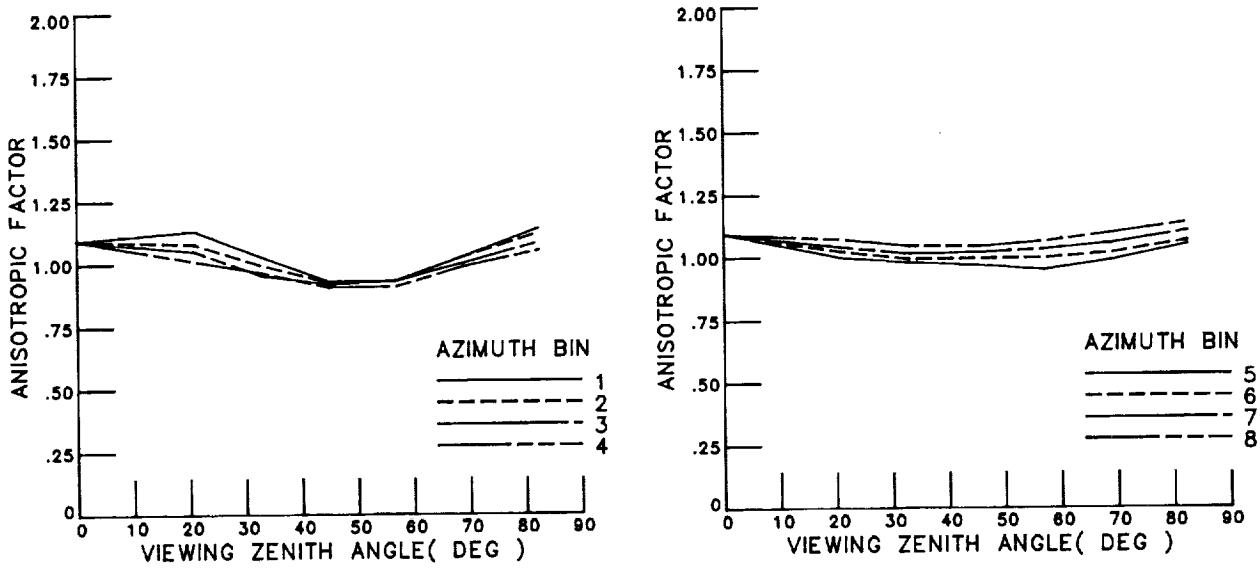
Figure 13. Concluded.

SCENE TYPE : PARTLY CLOUDY OVER LAND-OCEAN MIX
DATA 1 - SW ANISOTROPIC FACTOR
2 - STANDARD DEVIATION OF SW RADIANCES(W/M**2/SR)
3 - CORRELATION OF LW AND SW RADIANCES
( ) - DATA SOURCE

SUN ZENITH : .C - 25.8
MEAN ALBEDO : .1690 (19)
NORMALIZED ALBEDO : 1.0000 (19)

RELATIVE AZIMUTH

BIN NO. / ANGLE(DEG.)		1 0-9	2 9-30	3 30-60	4 60-90	5 90-120	6 120-150	7 150-171	8 171-180
VIEWING ZENITH BIN NO.	ANGLE(DEG.)								
1	0-15	1.09 (2) 27.5 (2) .163 (2)	1.09 (2) 27.5 (2) .163 (2)	1.09 (2) 27.5 (2) .163 (2)	1.09 (2) 27.5 (2) .163 (2)	1.09 (2) 27.5 (2) .163 (2)	1.09 (2) 27.5 (2) .163 (2)	1.09 (2) 27.5 (2) .163 (2)	1.09 (2) 27.5 (2) .163 (2)
2	15-27	1.13 (2) 26.8 (2) .094 (2)	1.08 (2) 23.4 (2) .072 (2)	1.05 (2) 25.5 (2) .158 (2)	1.01 (2) 27.4 (2) .155 (2)	1.00 (2) 29.0 (2) .179 (2)	1.02 (2) 31.2 (2) .161 (2)	1.04 (2) 31.7 (2) .176 (2)	1.07 (2) 33.2 (2) .190 (2)
3	27-39	1.03 (2) 25.0 (2) .134 (2)	.99 (2) 25.0 (2) .162 (2)	.95 (2) 26.7 (2) .182 (2)	.97 (2) 28.4 (2) .176 (2)	.98 (2) 29.8 (2) .190 (2)	.99 (2) 30.3 (2) .184 (2)	1.01 (2) 31.5 (2) .181 (2)	1.05 (2) 32.5 (2) .158 (2)
4	39-51	.93 (2) 27.4 (2) .093 (2)	.93 (2) 27.9 (2) .144 (2)	.92 (2) 27.8 (2) .138 (2)	.91 (2) 27.9 (2) .197 (2)	.97 (2) 30.2 (2) .185 (2)	1.00 (2) 30.5 (2) .179 (2)	1.02 (2) 30.4 (2) .135 (2)	1.04 (2) 30.2 (2) .126 (2)
5	51-63	.93 (2) 26.1 (2) .101 (2)	.93 (2) 26.5 (2) .088 (2)	.93 (2) 26.0 (2) .141 (2)	.91 (2) 26.4 (2) .199 (2)	.95 (2) 28.1 (2) .221 (2)	1.00 (2) 29.2 (2) .220 (2)	1.03 (2) 28.4 (2) .147 (2)	1.06 (2) 28.5 (2) .128 (2)
6	63-75	1.03 (2) 25.7 (2) -.061 (2)	1.03 (2) 25.6 (2) -.097 (2)	1.00 (2) 24.2 (2) -.030 (2)	.99 (2) 24.8 (2) .083 (2)	.99 (2) 26.1 (2) .098 (2)	1.02 (2) 27.2 (2) .145 (2)	1.06 (2) 25.3 (2) .058 (2)	1.10 (2) 25.3 (2) .029 (2)
7	75-90	1.14 (2) 22.6 (2) -.174 (2)	1.12 (2) 23.1 (2) -.201 (2)	1.08 (2) 22.1 (2) -.155 (2)	1.05 (2) 21.4 (2) -.004 (2)	1.05 (2) 22.8 (2) -.050 (2)	1.06 (2) 22.7 (2) .026 (2)	1.10 (2) 22.1 (2) -.076 (2)	1.14 (2) 21.9 (2) -.027 (2)



(a) Solar-zenith-angle bin 1, 0° to 25.84°.

Figure 14. Bidirectional model for partly cloudy over land-ocean mix. (See table 5 for explanation of data sources.)

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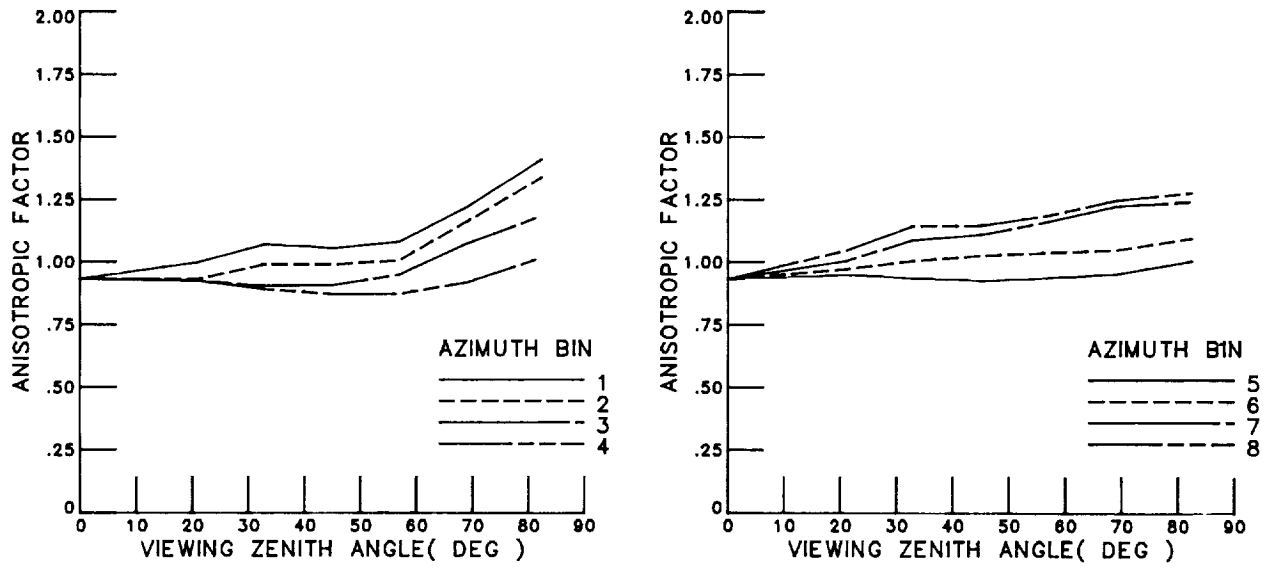
SCENE TYPE : PARTLY CLOUDY OVER LAND-OCEAN MIX
DATA 1 - SW ANISOTROPIC FACTOR
2 - STANDARD DEVIATION OF SW RADIANCES(W/M**2/SR)
3 - CORRELATION OF LW AND SW RADIANCES
( ) - DATA SOURCE

SUN ZENITH : 25.8 - 36.9
MEAN ALBEDO : .1605 (19)
NORMALIZED ALBEDO : 1.0680 (19)

RELATIVE AZIMUTH

BIN NO. / ANGLE(DEG.)		1 0-9	2 9-30	3 30-60	4 60-90	5 90-120	6 120-150	7 150-171	8 171-180
VIEWING ZENITH BIN NO.	ANGLE(DEG.)								
1	0-15	.93 (2)	.93 (2)	.93 (2)	.93 (2)	.93 (2)	.93 (2)	.93 (2)	.93 (2)
		26.6 (2)	26.6 (2)	26.6 (2)	26.6 (2)	26.6 (2)	26.6 (2)	26.6 (2)	26.6 (2)
		.055 (2)	.055 (2)	.055 (2)	.055 (2)	.055 (2)	.055 (2)	.055 (2)	.055 (2)
2	15-27	1.00 (2)	.93 (2)	.92 (2)	.93 (2)	.95 (2)	.97 (2)	1.01 (2)	1.05 (2)
		22.3 (2)	19.8 (2)	24.8 (2)	27.2 (2)	28.0 (2)	28.1 (2)	29.2 (2)	31.5 (2)
		-.001 (2)	-.071 (2)	.026 (2)	.050 (2)	.060 (2)	.090 (2)	.079 (2)	.112 (2)
3	27-39	1.07 (2)	.99 (2)	.90 (2)	.89 (2)	.94 (2)	1.01 (2)	1.09 (2)	1.15 (2)
		20.6 (2)	20.0 (2)	24.6 (2)	26.2 (2)	26.3 (2)	28.2 (2)	31.2 (2)	31.0 (2)
		-.178 (2)	-.035 (2)	.068 (2)	.086 (2)	.025 (2)	.115 (2)	.112 (2)	.044 (2)
4	39-51	1.06 (2)	.99 (2)	.91 (2)	.87 (2)	.93 (2)	1.03 (2)	1.11 (2)	1.15 (2)
		20.7 (2)	22.1 (2)	24.2 (2)	26.5 (2)	26.2 (2)	28.4 (2)	29.2 (2)	29.2 (2)
		-.216 (2)	-.058 (2)	.016 (2)	.111 (2)	.096 (2)	.103 (2)	.091 (2)	.088 (2)
5	51-63	1.08 (2)	1.01 (2)	.95 (2)	.87 (2)	.94 (2)	1.04 (2)	1.16 (2)	1.19 (2)
		22.3 (2)	22.2 (2)	23.1 (2)	25.3 (2)	25.2 (2)	26.8 (2)	26.8 (2)	27.3 (2)
		-.146 (2)	-.054 (2)	-.038 (2)	.117 (2)	.128 (2)	.088 (2)	.046 (2)	.079 (2)
6	63-75	1.22 (2)	1.16 (2)	1.07 (2)	.92 (2)	.95 (2)	1.05 (2)	1.23 (2)	1.25 (2)
		25.5 (2)	24.4 (2)	23.9 (2)	23.8 (2)	25.2 (2)	25.5 (2)	24.7 (2)	24.9 (2)
		-.252 (2)	-.263 (2)	-.152 (2)	-.001 (2)	.065 (2)	.073 (2)	-.007 (2)	-.055 (2)
7	75-90	1.41 (2)	1.34 (2)	1.19 (2)	1.02 (2)	1.01 (2)	1.10 (2)	1.24 (2)	1.28 (2)
		27.2 (2)	25.0 (2)	22.6 (2)	19.6 (2)	22.1 (2)	18.4 (2)	21.9 (2)	22.6 (2)
		-.208 (2)	-.354 (2)	-.202 (2)	-.095 (2)	-.035 (2)	-.118 (2)	-.049 (2)	-.084 (2)



(b) Solar-zenith-angle bin 2, 25.84° to 36.87°.

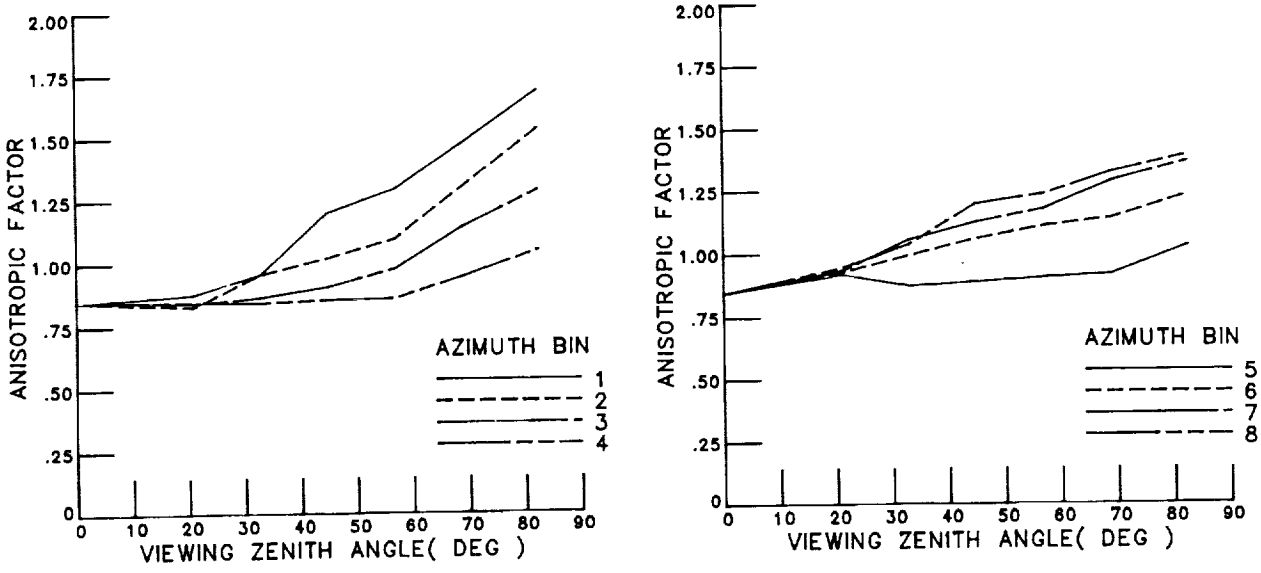
Figure 14. Continued.

SCENE TYPE : PARTLY CLOUDY OVER LAND-OCEAN MIX
DATA 1 - SW ANISOTROPIC FACTOR
2 - STANDARD DEVIATION OF SW RADIANCES(W/M**2/SR)
3 - CORRELATION OF LW AND SW RADIANCES
( ) - DATA SOURCE

SUN ZENITH : 36.9 - 45.6
MEAN ALBEDO : .1900 (19)
NORMALIZED ALBEDO : 1.1243 (19)

RELATIVE AZIMUTH

VIEWING ZENITH BIN NO.	ANGLE(DEG.)	1 0-9	2 9-30	3 30-60	4 60-90	5 90-120	6 120-150	7 150-171	8 171-180
1	0-15	.85 (2)	.85 (2)	.85 (2)	.85 (2)	.85 (2)	.85 (2)	.85 (2)	.85 (2)
		26.5 (2)	26.5 (2)	26.5 (2)	26.5 (2)	26.5 (2)	26.5 (2)	26.5 (2)	26.5 (2)
		.086 (2)	.086 (2)	.086 (2)	.086 (2)	.086 (2)	.086 (2)	.086 (2)	.086 (2)
2	15-27	.88 (2)	.83 (2)	.84 (2)	.85 (2)	.92 (2)	.93 (2)	.93 (2)	.95 (2)
		25.7 (2)	22.7 (2)	26.1 (2)	26.7 (2)	27.7 (2)	27.6 (2)	27.8 (2)	27.9 (2)
		.127 (2)	-.041 (2)	.099 (2)	.118 (2)	.114 (2)	.113 (2)	.163 (2)	.145 (2)
3	27-39	.96 (2)	.96 (2)	.87 (2)	.84 (2)	.87 (2)	.99 (2)	1.06 (2)	1.04 (2)
		19.6 (2)	23.5 (2)	26.3 (2)	26.7 (2)	24.7 (2)	27.7 (2)	30.0 (2)	26.5 (2)
		-.180 (2)	.018 (2)	.106 (2)	.156 (2)	.077 (2)	.081 (2)	.105 (2)	.092 (2)
4	39-51	1.20 (2)	1.02 (2)	.91 (2)	.86 (2)	.89 (2)	1.06 (2)	1.12 (2)	1.20 (2)
		26.7 (2)	22.2 (2)	25.9 (2)	26.3 (2)	25.6 (2)	28.7 (2)	29.1 (2)	30.8 (2)
		-.221 (2)	-.092 (2)	-.002 (2)	.115 (2)	.093 (2)	.090 (2)	.093 (2)	.070 (2)
5	51-63	1.29 (2)	1.09 (2)	.98 (2)	.86 (2)	.90 (2)	1.11 (2)	1.18 (2)	1.24 (2)
		23.3 (2)	23.5 (2)	25.8 (2)	24.7 (2)	24.7 (2)	28.7 (2)	26.8 (2)	28.4 (2)
		-.245 (2)	-.131 (2)	-.055 (2)	.061 (2)	.129 (2)	.130 (2)	.054 (2)	.090 (2)
6	63-75	1.47 (2)	1.30 (2)	1.14 (2)	.94 (2)	.92 (2)	1.14 (2)	1.29 (2)	1.32 (2)
		27.6 (2)	26.2 (2)	26.0 (2)	26.4 (2)	23.6 (2)	26.9 (2)	25.0 (2)	26.1 (2)
		-.355 (2)	-.309 (2)	-.156 (2)	.007 (2)	.050 (2)	.025 (2)	-.022 (2)	.023 (2)
7	75-90	1.66 (2)	1.53 (2)	1.26 (2)	1.04 (2)	1.03 (2)	1.23 (2)	1.36 (2)	1.39 (2)
		27.8 (2)	26.4 (2)	24.5 (2)	19.0 (2)	22.3 (2)	23.1 (2)	22.8 (2)	23.5 (2)
		-.400 (2)	-.381 (2)	-.267 (2)	-.102 (2)	-.042 (2)	-.102 (2)	-.081 (2)	-.091 (2)



(c) Solar-zenith-angle bin 3, 36.87° to 45.57°.

Figure 14. Continued.

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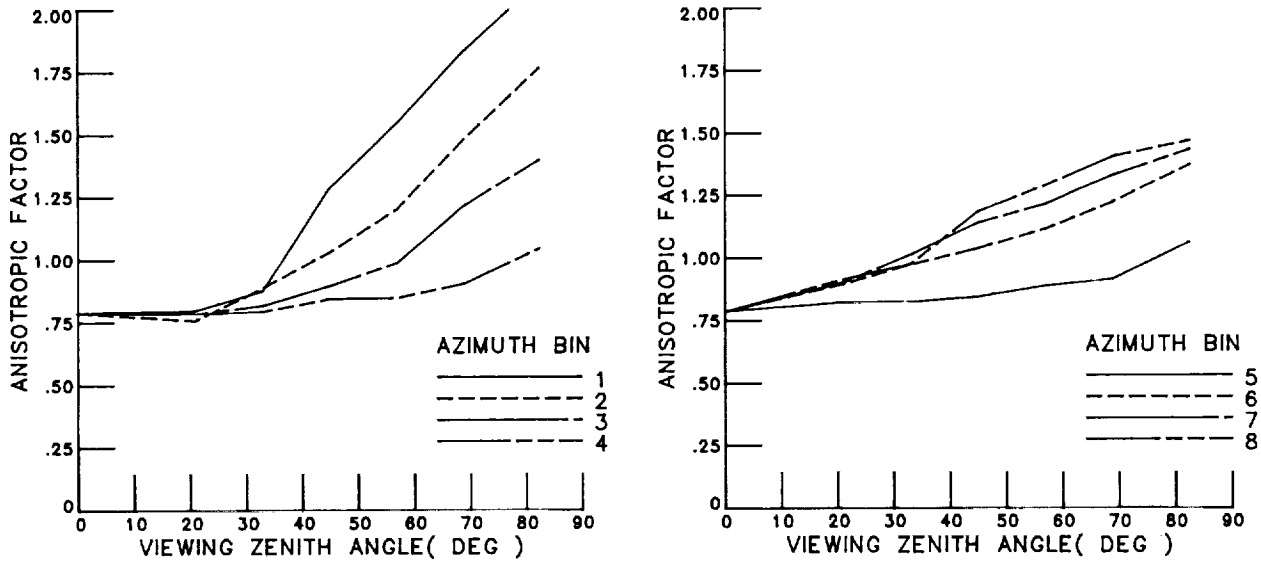
SCENE TYPE : PARTLY CLOUDY OVER LAND-OCEAN MIX
DATA 1 - SW ANISOTROPIC FACTOR
2 - STANDARD DEVIATION OF SW RADIANCES(W/M**2/SR)
3 - CORRELATION OF LW AND SW RADIANCES
( ) - DATA SOURCE

SUN ZENITH : 45.6 - 53.1
MEAN ALBEDO : .2055 (19)
NORMALIZED ALBEDO : 1.2160 (19)

RELATIVE AZIMUTH

BIN NO. / ANGLE(DEG.)		1 0-9	2 9-30	3 30-60	4 60-90	5 90-120	6 120-150	7 150-171	8 171-180
VIEWING ZENITH BIN NO.	ANGLE(DEG.)								
1	0-15	.79 (2)	.79 (2)	.79 (2)	.79 (2)	.79 (2)	.79 (2)	.79 (2)	.79 (2)
		21.9 (2)	21.9 (2)	21.9 (2)	21.9 (2)	21.9 (2)	21.9 (2)	21.9 (2)	21.9 (2)
		.037 (2)	.037 (2)	.037 (2)	.037 (2)	.037 (2)	.037 (2)	.037 (2)	.037 (2)
2	15-27	.80 (2)	.76 (2)	.78 (2)	.78 (2)	.82 (2)	.90 (2)	.90 (2)	.92 (2)
		20.5 (2)	19.6 (2)	21.8 (2)	22.4 (2)	23.0 (2)	23.7 (2)	23.3 (2)	24.0 (2)
		.042 (2)	-.068 (2)	.038 (2)	.083 (2)	.073 (2)	-.029 (2)	.099 (2)	.009 (2)
3	27-39	.86 (2)	.89 (2)	.82 (2)	.79 (2)	.82 (2)	.97 (2)	1.01 (2)	.98 (2)
		17.1 (2)	20.3 (2)	21.1 (2)	21.8 (2)	22.1 (2)	24.1 (2)	24.7 (2)	21.0 (2)
		-.253 (2)	-.010 (2)	.040 (2)	.068 (2)	.111 (2)	.054 (2)	.113 (2)	.007 (2)
4	39-51	1.28 (2)	1.03 (2)	.90 (2)	.84 (2)	.85 (2)	1.04 (2)	1.14 (2)	1.18 (2)
		25.1 (2)	19.9 (2)	22.1 (2)	23.2 (2)	22.0 (2)	24.5 (2)	26.2 (2)	26.6 (2)
		-.239 (2)	-.214 (2)	-.047 (2)	.125 (2)	.046 (2)	.019 (2)	.086 (2)	.031 (2)
5	51-63	1.55 (2)	1.20 (2)	.99 (2)	.85 (2)	.85 (2)	1.12 (2)	1.21 (2)	1.29 (2)
		29.1 (2)	21.7 (2)	22.4 (2)	21.7 (2)	21.7 (2)	25.7 (2)	24.9 (2)	25.7 (2)
		-.311 (2)	-.300 (2)	-.126 (2)	-.002 (2)	.050 (2)	.056 (2)	.034 (2)	.055 (2)
6	63-75	1.83 (2)	1.48 (2)	1.22 (2)	.91 (2)	.92 (2)	1.22 (2)	1.33 (2)	1.41 (2)
		30.5 (2)	27.1 (2)	24.0 (2)	21.5 (2)	21.9 (2)	24.1 (2)	22.4 (2)	23.4 (2)
		-.449 (2)	-.439 (2)	-.279 (2)	-.051 (2)	.004 (2)	-.043 (2)	-.040 (2)	-.021 (2)
7	75-90	2.11 (2)	1.77 (2)	1.40 (2)	1.04 (2)	1.06 (2)	1.37 (2)	1.43 (2)	1.47 (2)
		35.0 (2)	29.1 (2)	23.6 (2)	16.1 (2)	20.3 (2)	21.8 (2)	19.6 (2)	20.1 (2)
		-.460 (2)	-.465 (2)	-.370 (2)	-.136 (2)	-.051 (2)	-.022 (2)	-.095 (2)	-.096 (2)



(d) Solar-zenith-angle bin 4, 45.57° to 53.13°.

Figure 14. Continued.

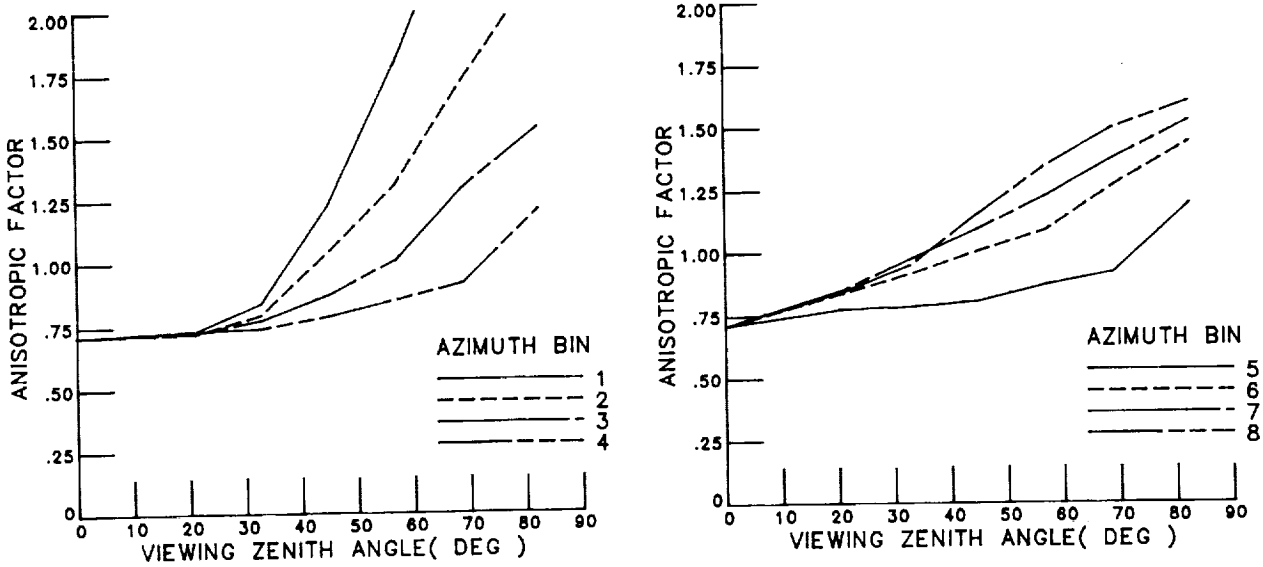
C-2

SCENE TYPE : PARTLY CLOUDY OVER LAND-OCEAN MIX
DATA 1 - SW ANISOTROPIC FACTOR
2 - STANDARD DEVIATION OF SW RADIANCES(W/M**2/SR)
3 - CORRELATION OF LW AND SW RADIANCES
( ) - DATA SOURCE

SUN ZENITH : 53.1 - 60.0
MEAN ALBEDO : .2195 (19)
NORMALIZED ALBEDO : 1.2588 (19)

RELATIVE AZIMUTH

VIEWING ZENITH BIN NO.	ANGLE(DEG.)	1 0-9	2 9-30	3 30-60	4 60-90	5 90-120	6 120-150	7 150-171	8 171-180
1	0-15	.71 (2)	.71 (2)	.71 (2)	.71 (2)	.71 (2)	.71 (2)	.71 (2)	.71 (2)
		16.9 (2)	16.9 (2)	16.9 (2)	16.9 (2)	16.9 (2)	16.9 (2)	16.9 (2)	16.9 (2)
		-.102 (2)	-.102 (2)	-.102 (2)	-.102 (2)	-.102 (2)	-.102 (2)	-.102 (2)	-.102 (2)
2	15-27	.74 (2)	.72 (2)	.73 (2)	.73 (2)	.78 (2)	.84 (2)	.85 (2)	.85 (2)
		15.9 (2)	16.3 (2)	17.5 (2)	17.4 (2)	18.8 (2)	19.2 (2)	18.8 (2)	17.9 (2)
		-.075 (2)	-.161 (2)	-.133 (2)	-.059 (2)	-.085 (2)	-.078 (2)	-.092 (2)	.002 (2)
3	27-39	.84 (2)	.79 (2)	.77 (2)	.74 (2)	.78 (2)	.92 (2)	.97 (2)	.95 (2)
		14.1 (2)	14.5 (2)	17.1 (2)	16.2 (2)	18.1 (2)	19.3 (2)	20.4 (2)	18.9 (2)
		-.153 (2)	-.275 (2)	-.126 (2)	-.052 (2)	-.055 (2)	-.054 (2)	-.014 (2)	-.126 (2)
4	39-51	1.23 (2)	1.04 (2)	.87 (2)	.79 (2)	.81 (2)	1.01 (2)	1.10 (2)	1.15 (2)
		18.5 (2)	18.2 (2)	18.4 (2)	17.4 (2)	17.5 (2)	20.0 (2)	20.6 (2)	23.5 (2)
		-.363 (2)	-.365 (2)	-.238 (2)	-.105 (2)	-.043 (2)	.017 (2)	.005 (2)	-.113 (2)
5	51-63	1.79 (2)	1.31 (2)	1.01 (2)	.85 (2)	.87 (2)	1.09 (2)	1.22 (2)	1.34 (2)
		42.3 (2)	21.1 (2)	16.8 (2)	17.4 (2)	17.5 (2)	20.1 (2)	20.4 (2)	23.5 (2)
		-.266 (2)	-.419 (2)	-.230 (2)	-.030 (2)	-.005 (2)	-.001 (2)	-.051 (2)	.046 (2)
6	63-75	2.43 (2)	1.72 (2)	1.30 (2)	.91 (2)	.92 (2)	1.27 (2)	1.37 (2)	1.49 (2)
		47.5 (2)	31.0 (2)	22.6 (2)	18.1 (2)	18.8 (2)	21.5 (2)	18.9 (2)	21.6 (2)
		-.421 (2)	-.464 (2)	-.401 (2)	-.092 (2)	-.049 (2)	-.106 (2)	-.114 (2)	-.077 (2)
7	75-90	2.92 (2)	2.15 (2)	1.53 (2)	1.21 (2)	1.19 (2)	1.44 (2)	1.52 (2)	1.60 (2)
		44.6 (2)	31.8 (2)	22.9 (2)	19.5 (2)	19.2 (2)	19.2 (2)	18.3 (2)	18.8 (2)
		-.416 (2)	-.456 (2)	-.435 (2)	-.232 (2)	-.155 (2)	-.112 (2)	-.163 (2)	-.144 (2)



(e) Solar-zenith-angle bin 5, 53.13° to 60.00°.

Figure 14. Continued.

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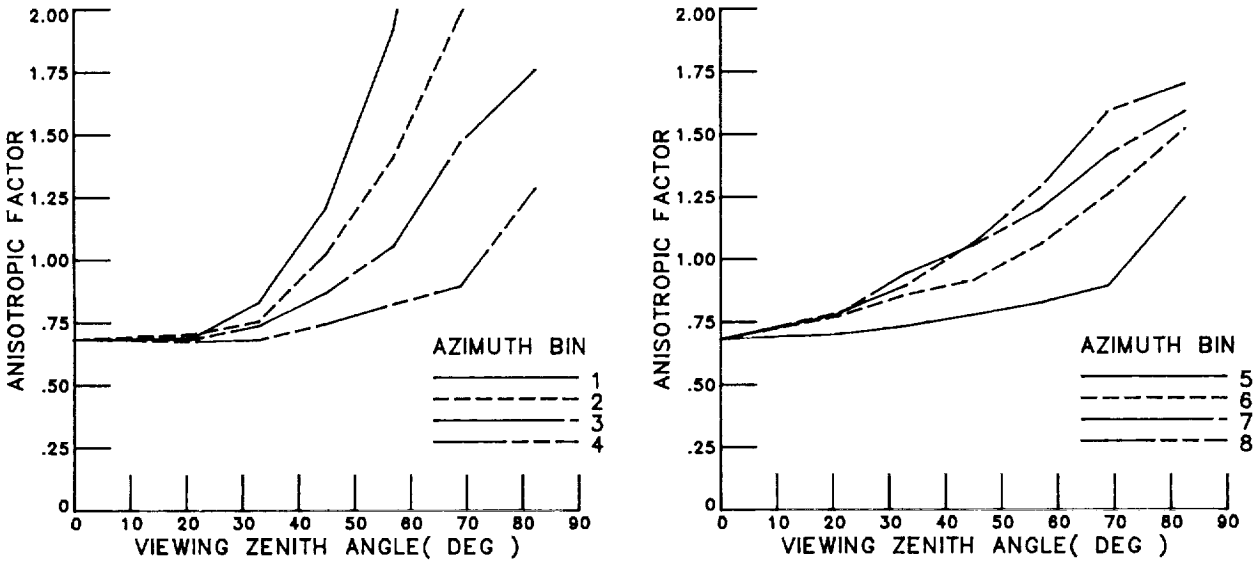
SCENE TYPE : PARTLY CLOUDY OVER LAND-OCEAN MIX
DATA 1 - SW ANISOTROPIC FACTOR
2 - STANDARD DEVIATION OF SW RADIANCES(W/M**2/SR)
3 - CORRELATION OF LW AND SW RADIANCES
( ) - DATA SOURCE

SUN ZENITH : 60.0 - 66.4
MEAN ALBEDO : .2450 (19)
NORMALIZED ALBEDO : 1.4497 (19)

RELATIVE AZIMUTH

BIN NO. / ANGLE(DEG.)		1 0-9	2 9-30	3 30-60	4 60-90	5 90-120	6 120-150	7 150-171	8 171-180
VIEWING ZENITH BIN NO.	ANGLE(DEG.)								
1	0-15	.68 (2)	.68 (2)	.68 (2)	.66 (2)	.68 (2)	.68 (2)	.68 (2)	.68 (2)
		13.5 (2)	13.5 (2)	13.5 (2)	13.5 (2)	13.5 (2)	13.5 (2)	13.5 (2)	13.5 (2)
		-.126 (2)	-.126 (2)	-.126 (2)	-.126 (2)	-.126 (2)	-.126 (2)	-.126 (2)	-.126 (2)
2	15-27	.69 (2)	.70 (2)	.68 (2)	.68 (2)	.70 (2)	.77 (2)	.78 (2)	.79 (2)
		12.7 (2)	13.2 (2)	12.5 (2)	12.7 (2)	12.9 (2)	14.7 (2)	13.7 (2)	14.1 (2)
		-.244 (2)	-.256 (2)	-.163 (2)	-.142 (2)	-.125 (2)	-.089 (2)	-.155 (2)	-.143 (2)
3	27-39	.83 (2)	.76 (2)	.74 (2)	.68 (2)	.73 (2)	.86 (2)	.94 (2)	.89 (2)
		14.1 (2)	11.6 (2)	12.0 (2)	13.0 (2)	12.9 (2)	15.1 (2)	16.6 (2)	12.9 (2)
		-.297 (2)	-.237 (2)	-.196 (2)	-.176 (2)	-.047 (2)	-.153 (2)	-.102 (2)	-.034 (2)
4	39-51	1.21 (2)	1.02 (2)	.87 (2)	.75 (2)	.78 (2)	.92 (2)	1.06 (2)	1.06 (2)
		17.4 (2)	14.2 (2)	14.1 (2)	13.4 (2)	14.6 (2)	14.7 (2)	16.7 (2)	15.8 (2)
		-.492 (2)	-.407 (2)	-.302 (2)	-.196 (2)	-.176 (2)	-.132 (2)	-.079 (2)	-.125 (2)
5	51-63	1.91 (2)	1.41 (2)	1.05 (2)	.82 (2)	.83 (2)	1.06 (2)	1.20 (2)	1.29 (2)
		33.7 (2)	20.5 (2)	17.2 (2)	13.3 (2)	12.7 (2)	16.0 (2)	16.0 (2)	17.0 (2)
		-.433 (2)	-.472 (2)	-.256 (2)	-.222 (2)	-.122 (2)	-.107 (2)	-.057 (2)	-.105 (2)
6	63-75	3.15 (2)	1.97 (2)	1.47 (2)	.89 (2)	.89 (2)	1.26 (2)	1.42 (2)	1.59 (2)
		66.0 (2)	32.6 (2)	22.4 (2)	14.4 (2)	14.3 (2)	16.5 (2)	16.1 (2)	19.8 (2)
		-.339 (2)	-.505 (2)	-.399 (2)	-.306 (2)	-.195 (2)	-.150 (2)	-.168 (2)	-.152 (2)
7	75-90	3.69 (2)	2.54 (2)	1.76 (2)	1.29 (2)	1.25 (2)	1.52 (2)	1.59 (2)	1.70 (2)
		70.5 (2)	38.5 (2)	25.9 (2)	17.7 (2)	15.9 (2)	14.9 (2)	15.1 (2)	16.2 (2)
		-.336 (2)	-.469 (2)	-.412 (2)	-.363 (2)	-.262 (2)	-.154 (2)	-.238 (2)	-.226 (2)



(f) Solar-zenith-angle bin 6, 60.00° to 66.42°.

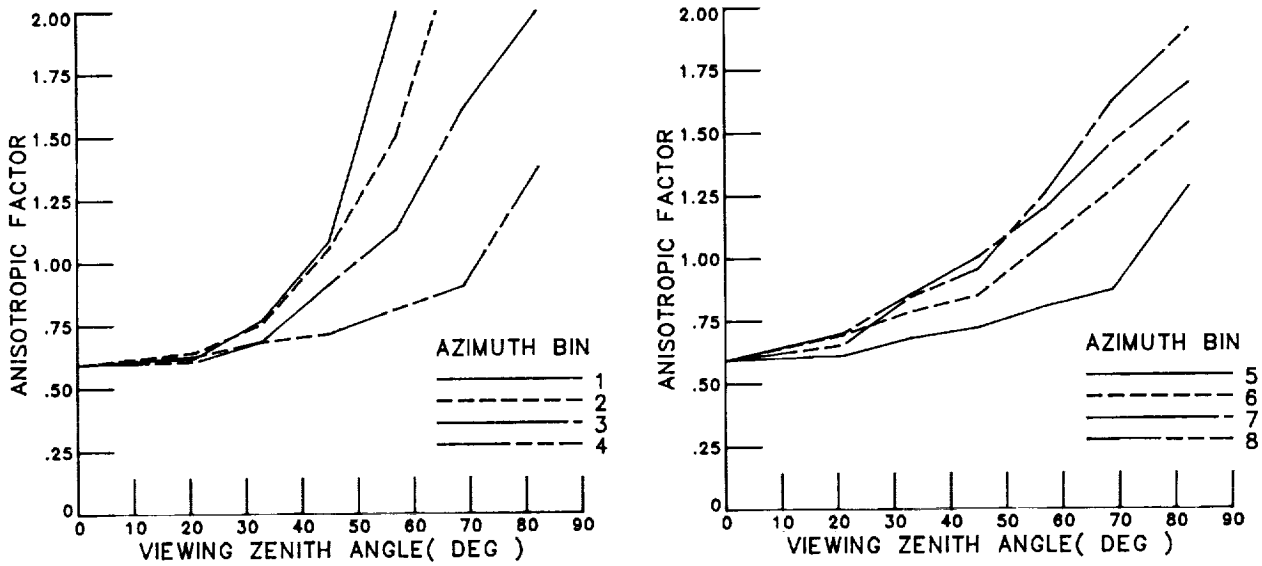
Figure 14. Continued.

SCENE TYPE : PARTLY CLOUDY OVER LAND-OCEAN MIX
DATA 1 - SW ANISOTROPIC FACTOR
2 - STANDARD DEVIATION OF SW RADIANCES(W/M**2/SR)
3 - CORRELATION OF LW AND SW RADIANCES
( ) - DATA SOURCE

SUN ZENITH : 66.4 - 72.5
MEAN ALBEDO : .2755 (19)
NORMALIZED ALBEDO : 1.6302 (19)

RELATIVE AZIMUTH

BIN NO. / ANGLE(DEG.)		1 0-9	2 9-30	3 30-60	4 60-90	5 90-120	6 120-150	7 150-171	8 171-180
VIEWING ZENITH BIN NO.	ANGLE(DEG.)								
1	0-15	.59 (2)	.59 (2)	.59 (2)	.59 (2)	.59 (2)	.59 (2)	.59 (2)	.59 (2)
		9.2 (2)	9.2 (2)	9.2 (2)	9.2 (2)	9.2 (2)	9.2 (2)	9.2 (2)	9.2 (2)
		-.216 (2)	-.216 (2)	-.216 (2)	-.216 (2)	-.216 (2)	-.216 (2)	-.216 (2)	-.216 (2)
2	15-27	.62 (2)	.64 (2)	.63 (2)	.61 (2)	.61 (2)	.69 (2)	.70 (2)	.65 (2)
		8.9 (2)	10.2 (2)	9.9 (2)	9.3 (2)	8.0 (2)	9.7 (2)	9.5 (2)	8.6 (2)
		-.366 (2)	-.411 (2)	-.159 (2)	-.193 (2)	-.200 (2)	.046 (2)	-.151 (2)	-.148 (2)
3	27-39	.77 (2)	.75 (2)	.69 (2)	.68 (2)	.68 (2)	.79 (2)	.86 (2)	.85 (2)
		10.3 (2)	9.5 (2)	9.0 (2)	11.6 (2)	9.1 (2)	12.7 (2)	10.3 (2)	11.3 (2)
		-.617 (2)	-.229 (2)	-.335 (2)	-.105 (2)	-.194 (2)	-.257 (2)	-.002 (2)	-.231 (2)
4	39-51	1.08 (2)	1.05 (2)	.91 (2)	.72 (2)	.72 (2)	.85 (2)	1.00 (2)	.95 (2)
		15.3 (2)	14.5 (2)	13.8 (2)	10.2 (2)	9.6 (2)	11.2 (2)	13.8 (2)	9.4 (2)
		-.379 (2)	-.404 (2)	-.418 (2)	-.275 (2)	-.113 (2)	-.120 (2)	-.227 (2)	-.014 (2)
5	51-63	1.96 (2)	1.50 (2)	1.13 (2)	.81 (2)	.81 (2)	1.06 (2)	1.20 (2)	1.26 (2)
		30.1 (2)	19.8 (2)	13.8 (2)	12.1 (2)	11.0 (2)	13.9 (2)	13.1 (2)	13.4 (2)
		-.298 (2)	-.436 (2)	-.117 (2)	-.239 (2)	-.181 (2)	-.122 (2)	-.192 (2)	-.021 (2)
6	63-75	3.99 (2)	2.32 (2)	1.61 (2)	.90 (2)	.87 (2)	1.27 (2)	1.46 (2)	1.62 (2)
		72.2 (2)	34.5 (2)	21.9 (2)	12.2 (2)	11.1 (2)	14.2 (2)	13.9 (2)	15.3 (2)
		-.254 (2)	-.424 (2)	-.332 (2)	-.322 (2)	-.280 (2)	-.202 (2)	-.200 (2)	-.160 (2)
7	75-90	4.64 (2)	3.05 (2)	2.01 (2)	1.38 (2)	1.26 (2)	1.54 (2)	1.70 (2)	1.92 (2)
		96.0 (2)	33.6 (2)	23.0 (2)	15.7 (2)	13.6 (2)	13.5 (2)	13.1 (2)	15.8 (2)
		-.212 (2)	-.344 (2)	-.380 (2)	-.345 (2)	-.264 (2)	-.134 (2)	-.301 (2)	-.090 (2)



(g) Solar-zenith-angle bin 7, 66.42° to 72.54°.

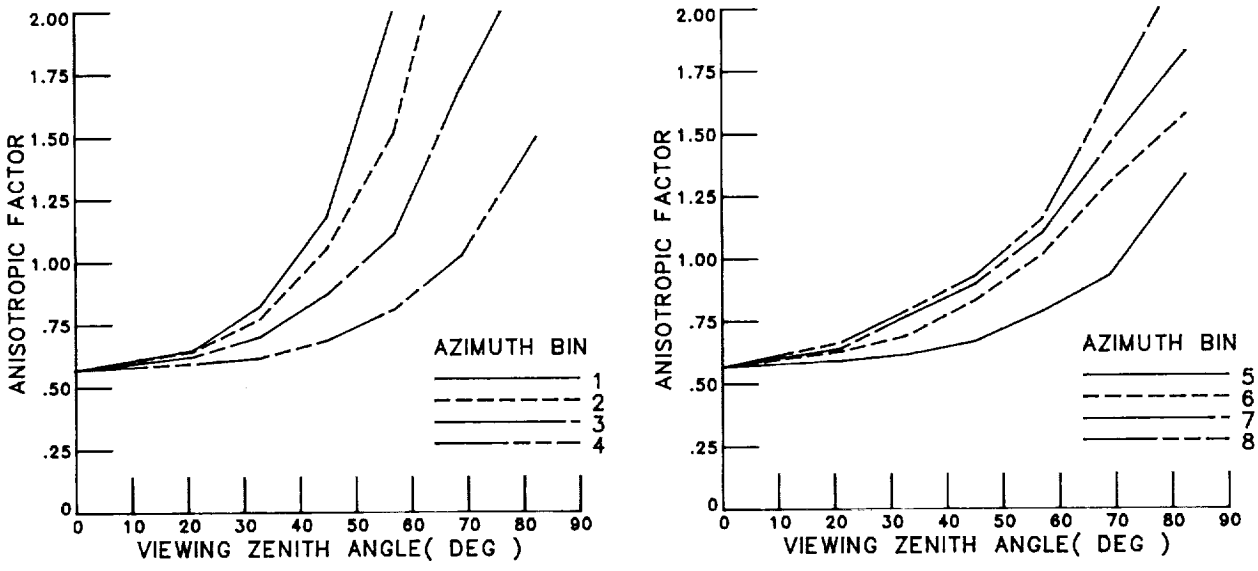
Figure 14. Continued.

SCENE TYPE : PARTLY CLOUDY OVER LAND-OCEAN MIX
DATA 1 - SW ANISOTROPIC FACTOR
2 - STANDARD DEVIATION OF SW RADIANCES(W/M**2/SR)
3 - CORRELATION OF LW AND SW RADIANCES
( ) - DATA SOURCE

SUN ZENITH : 72.5 - 78.5
MEAN ALBEDO : .3200 (19)
NORMALIZED ALBEDO : 1.8935 (19)

RELATIVE AZIMUTH

BIN NO.	1	2	3	4	5	6	7	8
ANGLE(DEG.)	0-9	9-30	30-60	60-90	90-120	120-150	150-171	171-180
VIEWING ZENITH BIN NO. ANGLE(DEG.)								
1 0-15	.57 (2)	.57 (2)	.57 (2)	.57 (2)	.57 (2)	.57 (2)	.57 (2)	.57 (2)
	7.3 (2)	7.3 (2)	7.3 (2)	7.3 (2)	7.3 (2)	7.3 (2)	7.3 (2)	7.3 (2)
	.071 (2)	.071 (2)	.071 (2)	.071 (2)	.071 (2)	.071 (2)	.071 (2)	.071 (2)
2 15-27	.65 (2)	.64 (2)	.62 (2)	.59 (2)	.59 (2)	.63 (2)	.64 (2)	.66 (2)
	8.1 (2)	8.4 (2)	8.8 (2)	7.6 (2)	7.0 (2)	6.7 (2)	7.1 (2)	7.6 (2)
	.036 (2)	.008 (2)	.003 (2)	.016 (2)	.074 (2)	.084 (2)	.088 (2)	.044 (2)
3 27-39	.82 (2)	.77 (2)	.70 (2)	.62 (2)	.62 (2)	.69 (2)	.77 (2)	.79 (2)
	9.6 (2)	8.4 (2)	7.3 (2)	6.0 (2)	6.3 (2)	8.6 (2)	7.1 (2)	8.4 (2)
	-.016 (2)	-.027 (2)	.031 (2)	.034 (2)	.078 (2)	.007 (2)	.101 (2)	.056 (2)
4 39-51	1.16 (2)	1.05 (2)	.87 (2)	.69 (2)	.67 (2)	.83 (2)	.90 (2)	.93 (2)
	11.3 (2)	11.5 (2)	9.8 (2)	7.5 (2)	6.5 (2)	8.8 (2)	9.2 (2)	7.6 (2)
	-.187 (2)	-.158 (2)	-.066 (2)	-.041 (2)	-.013 (2)	.045 (2)	.035 (2)	.030 (2)
5 51-63	2.01 (2)	1.51 (2)	1.11 (2)	.81 (2)	.75 (2)	1.01 (2)	1.10 (2)	1.16 (2)
	25.4 (2)	16.2 (2)	10.9 (2)	9.4 (2)	8.4 (2)	10.3 (2)	8.7 (2)	9.1 (2)
	-.236 (2)	-.188 (2)	-.110 (2)	.002 (2)	.043 (2)	.043 (2)	-.034 (2)	.051 (2)
6 63-75	4.14 (2)	2.52 (2)	1.69 (2)	1.02 (2)	.93 (2)	1.30 (2)	1.46 (2)	1.65 (2)
	78.6 (2)	32.0 (2)	18.2 (2)	12.1 (2)	9.5 (2)	11.1 (2)	10.2 (2)	13.2 (2)
	-.202 (2)	-.201 (2)	-.147 (2)	-.038 (2)	.068 (2)	-.012 (2)	-.020 (2)	-.008 (2)
7 75-90	5.36 (2)	3.63 (2)	2.27 (2)	1.50 (2)	1.34 (2)	1.58 (2)	1.83 (2)	2.18 (2)
	108.8 (2)	31.0 (2)	23.3 (2)	15.0 (2)	11.4 (2)	10.5 (2)	11.7 (2)	15.8 (2)
	-.113 (2)	-.147 (2)	-.051 (2)	-.072 (2)	-.034 (2)	-.036 (2)	.014 (2)	.076 (2)



(h) Solar-zenith-angle bin 8, 72.54° to 78.46°.

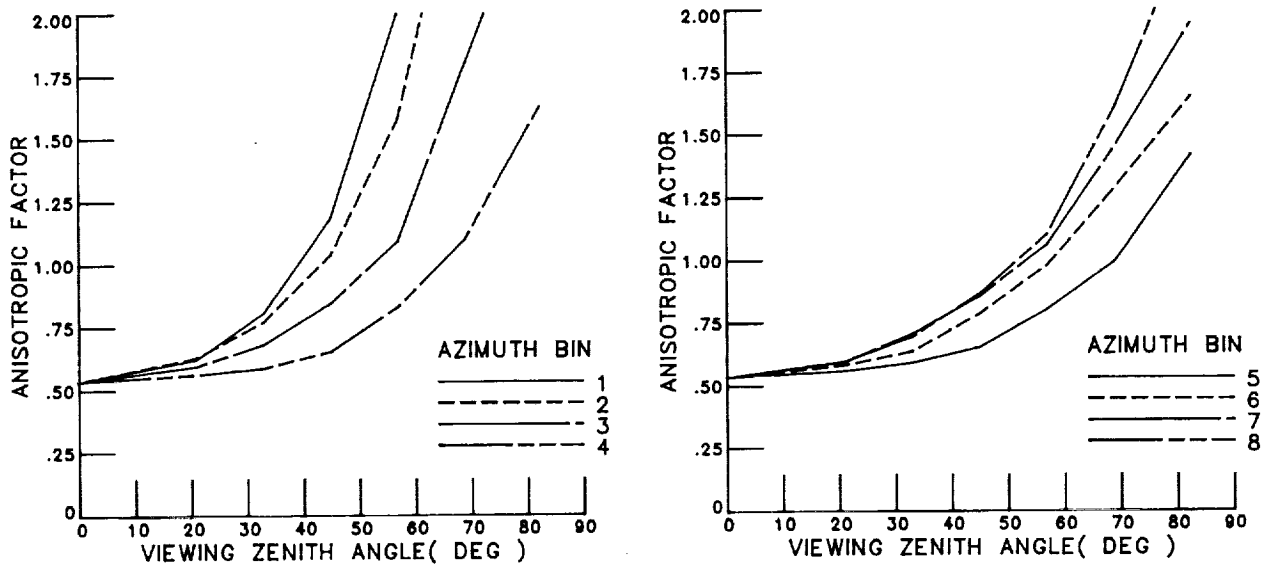
Figure 14. Continued.

SCENE TYPE : PARTLY CLOUDY OVER LAND-OCEAN MIX
DATA 1 - SW ANISOTROPIC FACTOR
2 - STANDARD DEVIATION OF SW RADIANCES(W/M**2/SR)
3 - CORRELATION OF LW AND SW RADIANCES
( ) - DATA SOURCE

SUN ZENITH : 78.5 - 84.3
MEAN ALBEDO : .3715 (19)
NORMALIZED ALBEDO : 2.1582 (19)

RELATIVE AZIMUTH

BIN NO. / ANGLE(DEG.)		1 0-9	2 9-30	3 30-60	4 60-90	5 90-120	6 120-150	7 150-171	8 171-180
VIEWING ZENITH BIN NO.	ANGLE(DEG.)								
1	0-15	.53 (2)	.53 (2)	.53 (2)	.53 (2)	.53 (2)	.53 (2)	.53 (2)	.53 (2)
		4.6 (2)	4.6 (2)	4.6 (2)	4.6 (2)	4.6 (2)	4.6 (2)	4.6 (2)	4.6 (2)
		.051 (2)	.051 (2)	.051 (2)	.051 (2)	.051 (2)	.051 (2)	.051 (2)	.051 (2)
2	15-27	.62 (2)	.63 (2)	.59 (2)	.56 (2)	.56 (2)	.58 (2)	.60 (2)	.60 (2)
		5.3 (2)	5.7 (2)	5.0 (2)	4.8 (2)	4.3 (2)	4.2 (2)	4.5 (2)	4.7 (2)
		-.026 (2)	-.070 (2)	.008 (2)	-.003 (2)	.061 (2)	.069 (2)	.089 (2)	.104 (2)
3	27-39	.61 (2)	.77 (2)	.68 (2)	.59 (2)	.55 (2)	.64 (2)	.71 (2)	.69 (2)
		6.8 (2)	5.7 (2)	4.6 (2)	5.2 (2)	3.5 (2)	5.3 (2)	4.5 (2)	5.8 (2)
		-.005 (2)	-.030 (2)	-.041 (2)	-.045 (2)	.061 (2)	.020 (2)	.092 (2)	-.004 (2)
4	39-51	1.18 (2)	1.04 (2)	.84 (2)	.65 (2)	.65 (2)	.79 (2)	.86 (2)	.87 (2)
		8.7 (2)	8.1 (2)	6.8 (2)	4.5 (2)	4.3 (2)	5.5 (2)	5.8 (2)	4.4 (2)
		-.266 (2)	-.183 (2)	-.111 (2)	-.046 (2)	.024 (2)	.074 (2)	.024 (2)	-.055 (2)
5	51-63	2.00 (2)	1.57 (2)	1.09 (2)	.83 (2)	.80 (2)	.98 (2)	1.06 (2)	1.10 (2)
		16.5 (2)	13.1 (2)	7.4 (2)	6.0 (2)	5.6 (2)	6.2 (2)	5.7 (2)	5.6 (2)
		-.226 (2)	-.222 (2)	-.121 (2)	-.057 (2)	.049 (2)	.044 (2)	-.039 (2)	-.042 (2)
6	63-75	4.17 (2)	2.70 (2)	1.80 (2)	1.10 (2)	.95 (2)	1.29 (2)	1.45 (2)	1.61 (2)
		63.0 (2)	23.9 (2)	14.2 (2)	7.1 (2)	6.3 (2)	6.9 (2)	6.9 (2)	8.4 (2)
		-.232 (2)	-.217 (2)	-.195 (2)	-.059 (2)	.054 (2)	-.036 (2)	-.088 (2)	-.007 (2)
7	75-90	5.75 (2)	4.02 (2)	2.58 (2)	1.63 (2)	1.42 (2)	1.65 (2)	1.94 (2)	2.33 (2)
		84.3 (2)	24.8 (2)	16.8 (2)	9.7 (2)	7.2 (2)	6.3 (2)	8.2 (2)	12.8 (2)
		-.132 (2)	-.060 (2)	-.069 (2)	-.089 (2)	-.035 (2)	.065 (2)	.005 (2)	.192 (2)



(i) Solar-zenith-angle bin 9, 78.46° to 84.26°.

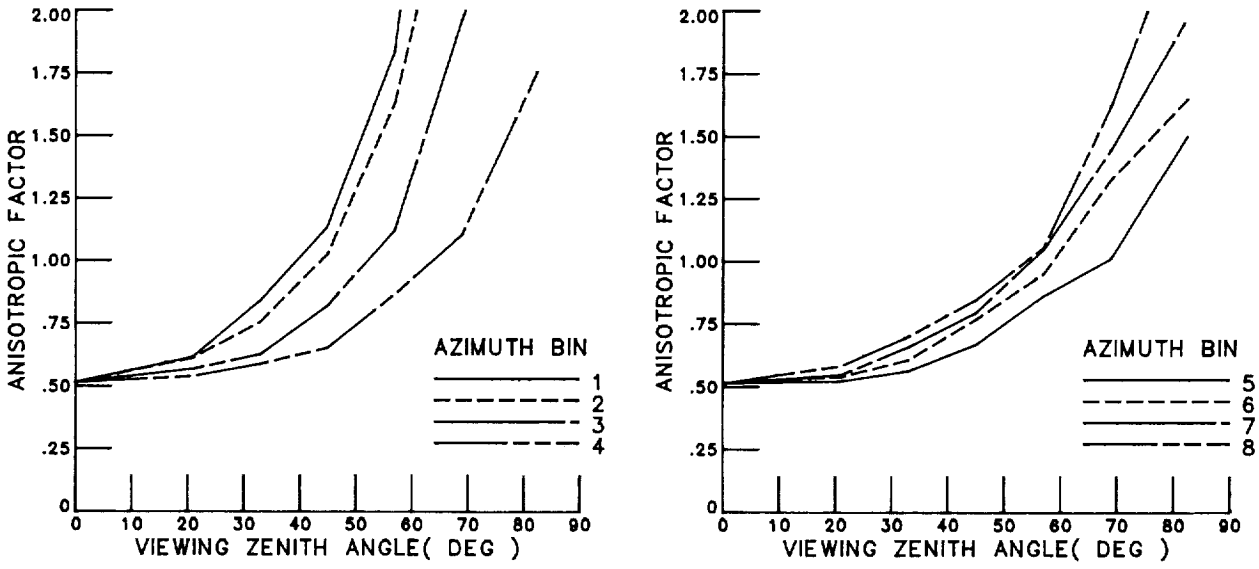
Figure 14. Continued.

SCENE TYPE : PARTLY CLOUDY OVER LAND-OCEAN MIX
DATA 1 - SW ANISOTROPIC FACTOR
2 - STANDARD DEVIATION OF SW RADIANCES(W/M**2/SR)
3 - CORRELATION OF LW AND SW RADIANCES
( ) - DATA SOURCE

SUN ZENITH : 84.3 - 90.0
MEAN ALBEDO : .4368 (19)
NORMALIZED ALBEDO : 2.5843 (19)

RELATIVE AZIMUTH

VIEWING ZENITH BIN NO.	VIEWING ZENITH ANGLE(DEG.)	AZIMUTH BIN NO. / ANGLE(DEG.) 1 0-9	2 9-30	3 30-60	4 60-90	5 90-120	6 120-150	7 150-171	8 171-180
1	0-15	.52 (2)	.52 (2)	.52 (2)	.52 (2)	.52 (2)	.52 (2)	.52 (2)	.52 (2)
		1.8 (2)	1.8 (2)	1.8 (2)	1.8 (2)	1.8 (2)	1.8 (2)	1.8 (2)	1.8 (2)
		-.067 (2)	-.067 (2)	-.067 (2)	-.067 (2)	-.067 (2)	-.067 (2)	-.067 (2)	-.067 (2)
2	15-27	.62 (2)	.61 (2)	.57 (2)	.54 (2)	.52 (2)	.54 (2)	.55 (2)	.58 (2)
		2.1 (2)	2.6 (2)	1.9 (2)	2.1 (2)	1.7 (2)	1.6 (2)	1.8 (2)	1.7 (2)
		.063 (2)	-.094 (2)	.042 (2)	.029 (2)	.025 (2)	.094 (2)	.030 (2)	.097 (2)
3	27-39	.64 (2)	.75 (2)	.63 (2)	.59 (2)	.56 (2)	.61 (2)	.66 (2)	.70 (2)
		2.8 (2)	2.2 (2)	2.0 (2)	1.9 (2)	1.5 (2)	2.0 (2)	1.8 (2)	1.7 (2)
		-.016 (2)	-.050 (2)	.090 (2)	-.140 (2)	.080 (2)	.011 (2)	-.078 (2)	-.049 (2)
4	39-51	1.14 (2)	1.03 (2)	.82 (2)	.65 (2)	.67 (2)	.77 (2)	.80 (2)	.85 (2)
		3.1 (2)	3.1 (2)	3.0 (2)	1.9 (2)	2.0 (2)	2.1 (2)	2.2 (2)	1.7 (2)
		-.347 (2)	-.195 (2)	-.125 (2)	-.109 (2)	-.047 (2)	.001 (2)	-.027 (2)	.063 (2)
5	51-63	1.63 (2)	1.63 (2)	1.12 (2)	.86 (2)	.86 (2)	.95 (2)	1.05 (2)	1.06 (2)
		6.1 (2)	5.3 (2)	3.2 (2)	2.3 (2)	2.3 (2)	2.2 (2)	2.1 (2)	2.1 (2)
		-.054 (2)	-.143 (2)	-.289 (2)	.000 (2)	.114 (2)	.146 (2)	-.062 (2)	-.126 (2)
6	63-75	3.95 (2)	2.77 (2)	1.96 (2)	1.11 (2)	1.01 (2)	1.33 (2)	1.45 (2)	1.62 (2)
		26.9 (2)	10.2 (2)	7.5 (2)	2.6 (2)	2.8 (2)	2.7 (2)	2.7 (2)	3.3 (2)
		-.262 (2)	-.226 (2)	-.162 (2)	.060 (2)	.016 (2)	.006 (2)	-.081 (2)	-.084 (2)
7	75-90	5.13 (2)	4.32 (2)	2.83 (2)	1.76 (2)	1.50 (2)	1.65 (2)	1.98 (2)	2.42 (2)
		37.7 (2)	12.5 (2)	8.1 (2)	4.2 (2)	3.5 (2)	3.6 (2)	3.3 (2)	5.4 (2)
		-.343 (2)	-.115 (2)	-.109 (2)	-.063 (2)	-.067 (2)	.042 (2)	-.069 (2)	.164 (2)



(j) Solar-zenith-angle bin 10, 84.26° to 90.00°.

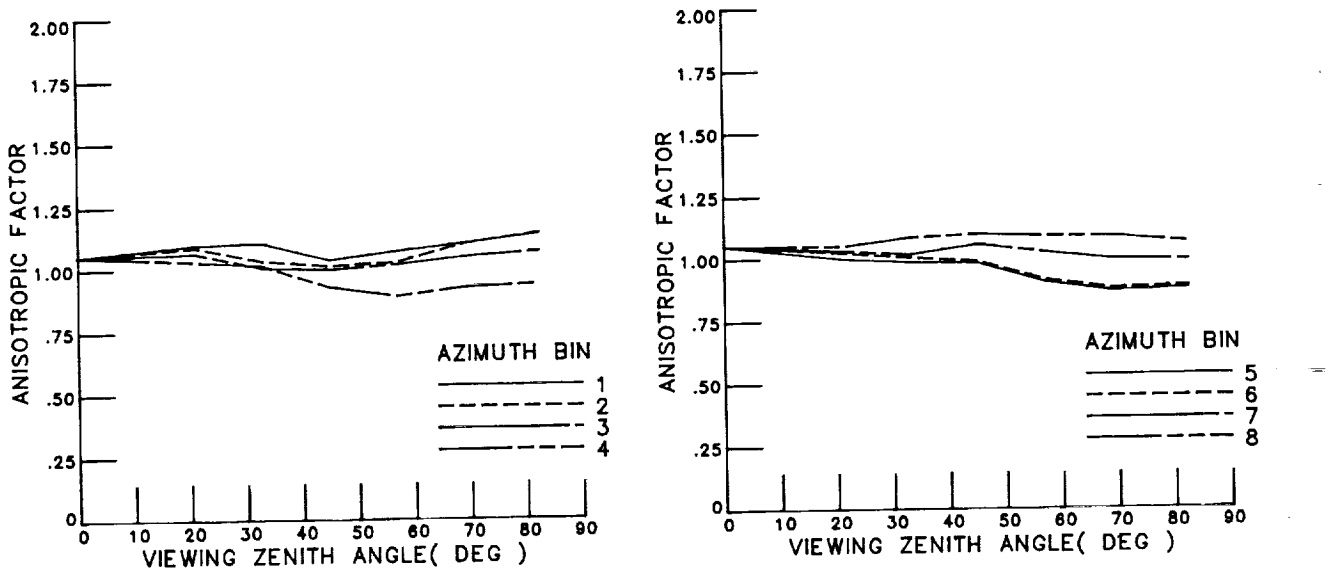
Figure 14. Concluded.

SCENE TYPE : MOSTLY CLOUDY OVER OCEAN
DATA 1 - SW ANISOTROPIC FACTOR
2 - STANDARD DEVIATION OF SW RADIANCES(W/M**2/SR)
3 - CORRELATION OF LW AND SW RADIANCES
( ) - DATA SOURCE

SUN ZENITH : .C - 25.8
MEAN ALBEDO : .2550 (18)
NORMALIZED ALBEDO : 1.0000 (18)

RELATIVE AZIMUTH

BIN NO. / ANGLE(DEG.)		1 0-9	2 9-30	3 30-60	4 60-90	5 90-120	6 120-150	7 150-171	8 171-180
VIEWING ZENITH BIN NO.	ANGLE(DEG.)								
1	0-15	1.05 (11) 42.6 (11) -.263 (11)	1.05 (11) 42.6 (11) -.263 (11)	1.05 (11) 42.6 (11) -.263 (11)	1.05 (11) 42.6 (11) -.263 (11)	1.05 (11) 42.6 (11) -.263 (11)	1.05 (11) 42.6 (11) -.263 (11)	1.05 (11) 42.6 (11) -.263 (11)	1.05 (11) 42.6 (11) -.263 (11)
2	15-27	1.10 (11) 40.7 (11) -.274 (11)	1.09 (11) 41.8 (11) -.280 (11)	1.06 (11) 43.7 (11) -.271 (11)	1.03 (11) 44.5 (11) -.279 (11)	1.00 (11) 44.1 (11) -.247 (11)	1.02 (11) 45.1 (11) -.249 (11)	1.03 (11) 44.9 (11) -.230 (11)	1.05 (11) 46.2 (11) -.235 (11)
3	27-39	1.10 (11) 42.3 (11) -.271 (11)	1.03 (11) 40.0 (11) -.247 (11)	1.00 (11) 42.6 (11) -.244 (11)	1.01 (11) 44.7 (11) -.188 (11)	.9E (11) 42.E (11) -.15E (11)	1.00 (11) 43.7 (11) -.188 (11)	1.02 (11) 43.6 (11) -.154 (11)	1.08 (11) 45.8 (11) -.219 (11)
4	39-51	1.03 (11) 42.2 (11) -.276 (11)	1.0. (11) 41.9 (11) -.276 (11)	1.00 (11) 42.9 (11) -.272 (11)	.93 (11) 41.1 (11) -.200 (11)	.9E (11) 43.E (11) -.18E (11)	.99 (11) 43.3 (11) -.127 (11)	1.06 (11) 45.2 (11) -.174 (11)	1.10 (11) 45.5 (11) -.201 (11)
5	51-63	1.07 (11) 39.9 (11) -.269 (11)	1.02 (11) 39.4 (11) -.264 (11)	1.02 (11) 39.2 (11) -.234 (11)	.89 (11) 36.2 (11) -.171 (11)	.9C (11) 37.E (11) -.18E (11)	.91 (11) 37.8 (11) -.106 (11)	1.02 (11) 41.0 (11) -.142 (11)	1.09 (11) 42.3 (11) -.180 (11)
6	63-75	1.10 (11) 36.9 (11) -.304 (11)	1.10 (11) 37.8 (11) -.330 (11)	1.04 (11) 35.5 (11) -.299 (11)	.92 (11) 31.0 (11) -.229 (11)	.8E (11) 31.E (11) -.23S (11)	.88 (11) 31.8 (11) -.183 (11)	.99 (11) 35.0 (11) -.235 (11)	1.09 (11) 37.9 (11) -.224 (11)
7	75-90	1.13 (11) 33.3 (11) -.347 (11)	1.14 (11) 34.7 (11) -.412 (11)	1.07 (11) 31.8 (11) -.366 (11)	.93 (11) 27.0 (11) -.280 (11)	.8E (11) 24.2 (11) -.303 (11)	.88 (11) 24.8 (11) -.237 (11)	.99 (11) 29.2 (11) -.314 (11)	1.06 (11) 30.8 (11) -.296 (11)



(a) Solar-zenith-angle bin 1, 0° to 25.84°.

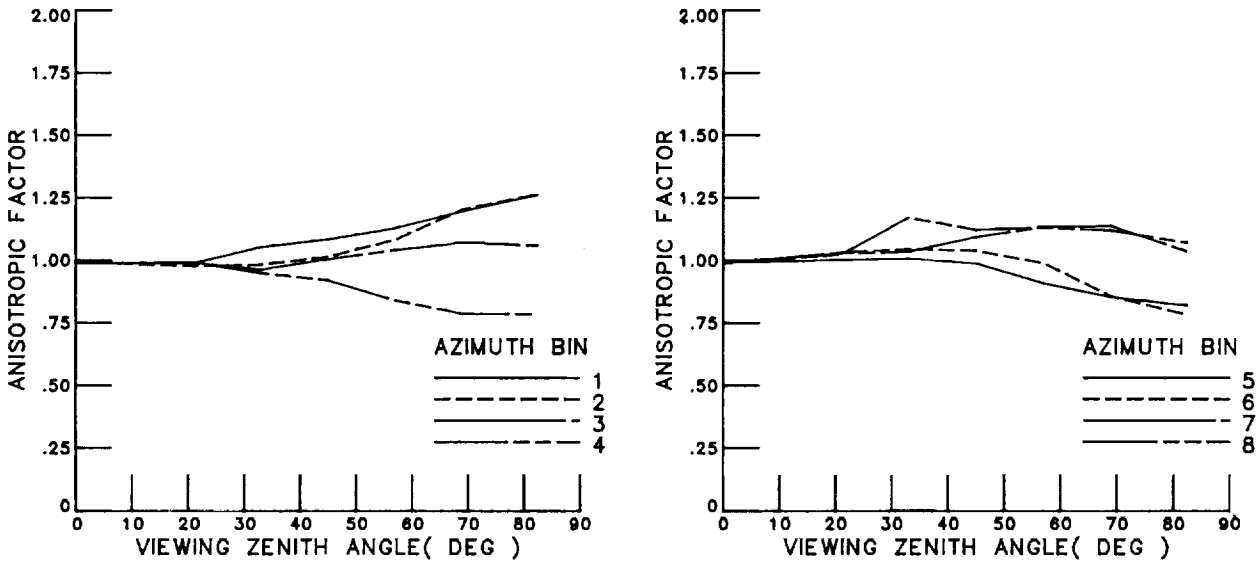
Figure 15. Bidirectional model for mostly cloudy over ocean. (See table 5 for explanation of data sources.)

SCENE TYPE : MOSTLY CLOUDY OVER OCEAN
DATA 1 - SW ANISOTROPIC FACTOR
2 - STANDARD DEVIATION OF SW RADIANCES(W/M**2/SR)
3 - CORRELATION OF LW AND SW RADIANCES
( ) - DATA SOURCE

SUN ZENITH : 25.8 - 36.9
MEAN ALBEDO : .2750 (18)
NORMALIZED ALBEDO : 1.0784 (18)

RELATIVE AZIMUTH

BIN NO.	VIEWING ZENITH ANGLE(DEG.)	1 0-9	2 9-30	3 30-60	4 60-90	5 90-120	6 120-150	7 150-171	8 171-180
1	0-15	.99 (11)	.99 (11)	.99 (11)	.99 (11)	.99 (11)	.99 (11)	.99 (11)	.99 (11)
		46.5 (11)	46.5 (11)	46.5 (11)	46.5 (11)	46.5 (11)	46.5 (11)	46.5 (11)	46.5 (11)
		-.389 (11)	-.389 (11)	-.389 (11)	-.389 (11)	-.389 (11)	-.389 (11)	-.389 (11)	-.389 (11)
2	15-27	.99 (11)	.98 (11)	.99 (11)	.99 (11)	1.00 (11)	1.03 (11)	1.03 (11)	1.02 (11)
		42.5 (11)	43.0 (11)	45.1 (11)	46.9 (11)	47.5 (11)	47.8 (11)	47.1 (11)	47.1 (11)
		-.418 (11)	-.436 (11)	-.416 (11)	-.408 (11)	-.414 (11)	-.380 (11)	-.386 (11)	-.421 (11)
3	27-39	1.05 (11)	.98 (11)	.96 (11)	.95 (11)	1.01 (11)	1.05 (11)	1.04 (11)	1.17 (11)
		39.0 (11)	40.3 (11)	43.5 (11)	45.3 (11)	45.7 (11)	47.0 (11)	45.6 (11)	48.9 (11)
		-.419 (11)	-.441 (11)	-.426 (11)	-.409 (11)	-.402 (11)	-.373 (11)	-.350 (11)	-.371 (11)
4	39-51	1.08 (11)	1.02 (11)	1.01 (11)	.92 (11)	.95 (11)	1.04 (11)	1.10 (11)	1.12 (11)
		40.8 (11)	41.1 (11)	43.9 (11)	45.1 (11)	45.5 (11)	47.9 (11)	46.2 (11)	46.3 (11)
		-.436 (11)	-.437 (11)	-.418 (11)	-.457 (11)	-.366 (11)	-.374 (11)	-.340 (11)	-.338 (11)
5	51-63	1.13 (11)	1.08 (11)	1.04 (11)	.84 (11)	.91 (11)	.99 (11)	1.14 (11)	1.13 (11)
		41.4 (11)	41.4 (11)	41.9 (11)	42.0 (11)	42.2 (11)	45.3 (11)	42.1 (11)	41.8 (11)
		-.406 (11)	-.413 (11)	-.406 (11)	-.437 (11)	-.392 (11)	-.345 (11)	-.288 (11)	-.293 (11)
6	63-75	1.20 (11)	1.20 (11)	1.07 (11)	.79 (11)	.85 (11)	.86 (11)	1.14 (11)	1.12 (11)
		40.0 (11)	40.7 (11)	39.3 (11)	35.5 (11)	40.0 (11)	38.9 (11)	39.4 (11)	38.0 (11)
		-.366 (11)	-.422 (11)	-.416 (11)	-.305 (11)	-.449 (11)	-.333 (11)	-.251 (11)	-.223 (11)
7	75-90	1.26 (11)	1.27 (11)	1.06 (11)	.79 (11)	.82 (5)	.78 (10)	1.04 (11)	1.07 (11)
		39.0 (11)	37.1 (11)	35.2 (11)	27.9 (11)	32.2 (5)	21.4 (10)	32.5 (11)	33.0 (11)
		-.393 (11)	-.426 (11)	-.406 (11)	-.304 (11)	-.376 (5)	-.319 (15)	-.306 (11)	-.302 (11)



(b) Solar-zenith-angle bin 2, 25.84° to 36.87°.

Figure 15. Continued.

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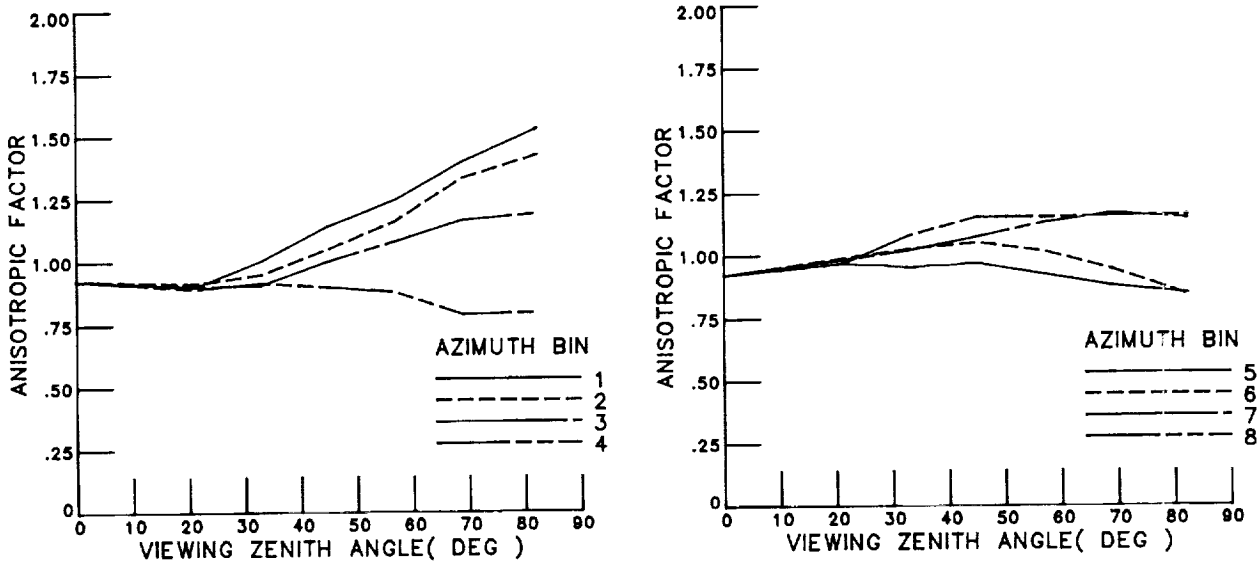
SCENE TYPE : MOSTLY CLOUDY OVER OCEAN
DATA 1 - SW ANISOTROPIC FACTOR
2 - STANDARD DEVIATION OF SW RADIANCES(W/M**2/SR)
3 - CORRELATION OF LW AND SW RADIANCES
( ) - DATA SOURCE

SUN ZENITH : 36.9 - 45.6
MEAN ALBEDO : .2900 (18)
NORMALIZED ALBEDO : 1.1373 (18)

RELATIVE AZIMUTH

VIEWING ZENITH BIN NO.	VIEWING ZENITH ANGLE(DEG.)	1 0-9	2 9-30	3 30-60	4 60-90	5 90-120	6 120-150	7 150-171	8 171-180
1	0-15	.92 (11)	.92 (11)	.92 (11)	.92 (11)	.92 (11)	.92 (11)	.92 (11)	.92 (11)
		41.5 (11)	41.5 (11)	41.5 (11)	41.5 (11)	41.5 (11)	41.5 (11)	41.5 (11)	41.5 (11)
		-.475 (11)	-.475 (11)	-.475 (11)	-.475 (11)	-.475 (11)	-.475 (11)	-.475 (11)	-.475 (11)
2	15-27	.90 (11)	.91 (11)	.90 (11)	.89 (11)	.97 (11)	.99 (11)	.98 (11)	.97 (11)
		39.1 (11)	38.1 (11)	39.4 (11)	40.4 (11)	42.6 (11)	41.4 (11)	42.7 (11)	41.9 (11)
		-.524 (11)	-.469 (11)	-.490 (11)	-.474 (11)	-.450 (11)	-.443 (11)	-.469 (11)	-.449 (11)
3	27-39	1.00 (11)	.95 (11)	.91 (11)	.92 (11)	.95 (11)	1.03 (11)	1.02 (11)	1.08 (11)
		35.3 (11)	37.1 (11)	39.6 (11)	39.7 (11)	41.2 (11)	42.2 (11)	41.3 (11)	42.5 (11)
		-.481 (11)	-.492 (11)	-.513 (11)	-.495 (11)	-.457 (11)	-.434 (11)	-.452 (11)	-.443 (11)
4	39-51	1.14 (11)	1.05 (11)	1.00 (11)	.90 (11)	.97 (11)	1.05 (11)	1.07 (11)	1.15 (11)
		36.2 (11)	37.5 (11)	41.3 (11)	39.6 (11)	41.5 (11)	42.6 (11)	41.3 (11)	42.8 (11)
		-.507 (11)	-.510 (11)	-.511 (11)	-.503 (11)	-.467 (11)	-.470 (11)	-.421 (11)	-.423 (11)
5	51-63	1.25 (11)	1.16 (11)	1.08 (11)	.88 (11)	.92 (11)	1.02 (11)	1.13 (11)	1.15 (11)
		36.0 (11)	38.5 (11)	38.8 (11)	37.6 (11)	39.0 (11)	39.8 (11)	36.9 (11)	38.6 (11)
		-.473 (11)	-.479 (11)	-.478 (11)	-.499 (11)	-.484 (11)	-.454 (11)	-.359 (11)	-.394 (11)
6	63-75	1.40 (11)	1.33 (11)	1.16 (11)	.79 (11)	.86 (11)	.94 (11)	1.17 (11)	1.16 (11)
		37.8 (11)	39.1 (11)	38.2 (11)	35.0 (11)	37.5 (11)	35.4 (11)	34.5 (11)	33.8 (11)
		-.394 (11)	-.466 (11)	-.486 (11)	-.505 (11)	-.497 (11)	-.376 (11)	-.335 (11)	-.332 (11)
7	75-90	1.53 (11)	1.42 (11)	1.19 (11)	.80 (10)	.85 (5)	.84 (10)	1.15 (11)	1.16 (11)
		37.3 (11)	36.9 (11)	36.6 (11)	28.0 (10)	31.5 (5)	23.0 (10)	31.2 (11)	29.3 (11)
		-.393 (11)	-.457 (11)	-.482 (11)	-.379 (10)	-.384 (5)	-.163 (10)	-.270 (11)	-.278 (11)



(c) Solar-zenith-angle bin 3, 36.87° to 45.57°.

Figure 15. Continued.

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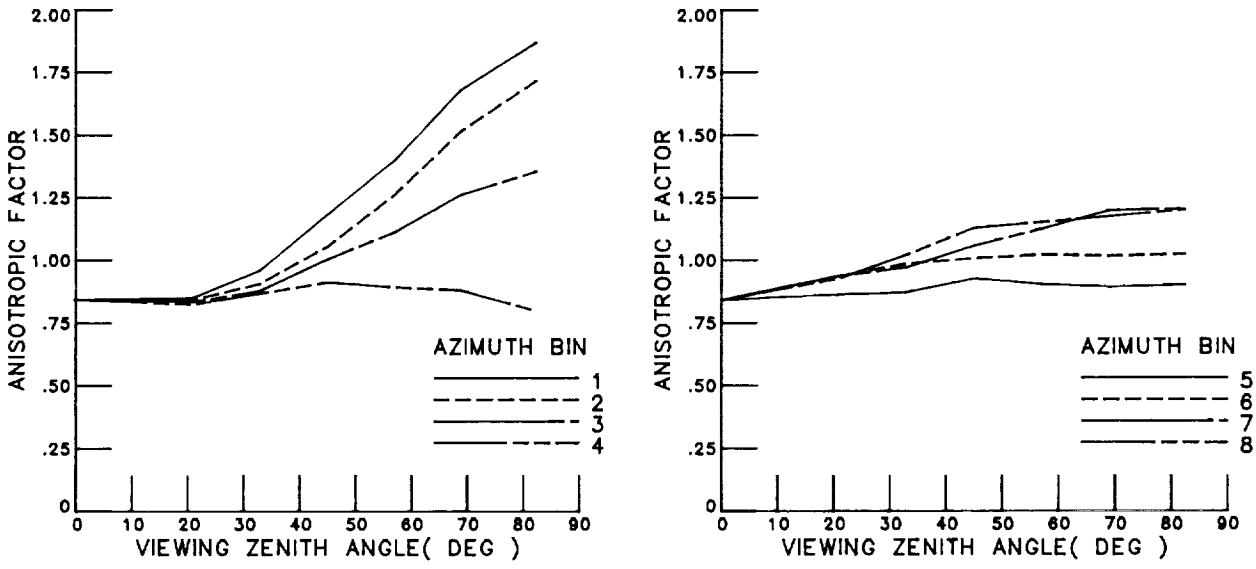
SCENE TYPE : MOSTLY CLOUDY OVER OCEAN
DATA 1 - SW ANISOTROPIC FACTOR
2 - STANDARD DEVIATION OF SW RADIANCES(W/M**2/SR)
3 - CORRELATION OF LW AND SW RADIANCES
( ) - DATA SOURCE

SUN ZENITH : 45.6 - 53.1
MEAN ALBEDO : .3150 (18)
NORMALIZED ALBEDO : 1.2353 (18)

RELATIVE AZIMUTH

BIN NO. / VIEWING ZENITH BIN NO.	ANGLE(DEG.)	1 0-9	2 9-30	3 30-60	4 60-90	5 90-120	6 120-150	7 150-171	8 171-180
1	0-15	.84 (11)	.84 (11)	.84 (11)	.84 (11)	.84 (11)	.84 (11)	.84 (11)	.84 (11)
		36.8 (11)	36.8 (11)	36.8 (11)	36.8 (11)	36.8 (11)	36.8 (11)	36.8 (11)	36.8 (11)
		-.476 (11)	-.476 (11)	-.476 (11)	-.476 (11)	-.476 (11)	-.476 (11)	-.476 (11)	-.476 (11)
2	15-27	.85 (11)	.84 (11)	.84 (11)	.83 (11)	.86 (11)	.94 (11)	.94 (11)	.93 (11)
		37.2 (11)	34.3 (11)	35.0 (11)	34.9 (11)	35.9 (11)	37.9 (11)	37.5 (11)	36.6 (11)
		-.506 (11)	-.501 (11)	-.496 (11)	-.487 (11)	-.443 (11)	-.437 (11)	-.447 (11)	-.412 (11)
3	27-39	.96 (11)	.91 (11)	.88 (11)	.87 (11)	.87 (11)	.99 (11)	.97 (11)	1.02 (11)
		36.6 (11)	33.6 (11)	34.4 (11)	34.6 (11)	34.8 (11)	38.1 (11)	36.6 (11)	37.8 (11)
		-.452 (11)	-.475 (11)	-.461 (11)	-.477 (11)	-.441 (11)	-.414 (11)	-.398 (11)	-.418 (11)
4	39-51	1.18 (11)	1.05 (11)	1.00 (11)	.91 (11)	.93 (11)	1.01 (11)	1.06 (11)	1.13 (11)
		34.7 (11)	33.0 (11)	36.9 (11)	35.8 (11)	35.5 (11)	36.4 (11)	36.0 (11)	39.1 (11)
		-.467 (11)	-.436 (11)	-.468 (11)	-.490 (11)	-.454 (11)	-.416 (11)	-.352 (11)	-.374 (11)
5	51-63	1.40 (11)	1.26 (11)	1.11 (11)	.89 (11)	.90 (11)	1.02 (11)	1.13 (11)	1.15 (11)
		31.6 (11)	35.5 (11)	37.1 (11)	33.4 (11)	33.9 (11)	35.4 (11)	33.7 (11)	34.9 (11)
		-.427 (11)	-.450 (11)	-.443 (11)	-.489 (11)	-.449 (11)	-.423 (11)	-.309 (11)	-.307 (11)
6	63-75	1.68 (11)	1.52 (11)	1.26 (11)	.88 (11)	.89 (11)	1.02 (11)	1.20 (11)	1.18 (11)
		35.4 (11)	38.8 (11)	38.1 (11)	33.6 (11)	33.6 (11)	31.6 (11)	30.9 (11)	30.3 (11)
		-.343 (11)	-.381 (11)	-.426 (11)	-.565 (11)	-.481 (11)	-.364 (11)	-.278 (11)	-.228 (11)
7	75-90	1.67 (11)	1.72 (11)	1.36 (11)	.80 (8)	.90 (5)	1.02 (10)	1.21 (11)	1.20 (11)
		34.7 (11)	41.1 (11)	37.6 (11)	21.9 (8)	29.0 (5)	26.8 (10)	27.4 (11)	26.4 (11)
		-.317 (11)	-.359 (11)	-.419 (11)	-.550 (8)	-.435 (5)	-.226 (10)	-.245 (11)	-.168 (11)



(d) Solar-zenith-angle bin 4, 45.57° to 53.13°.

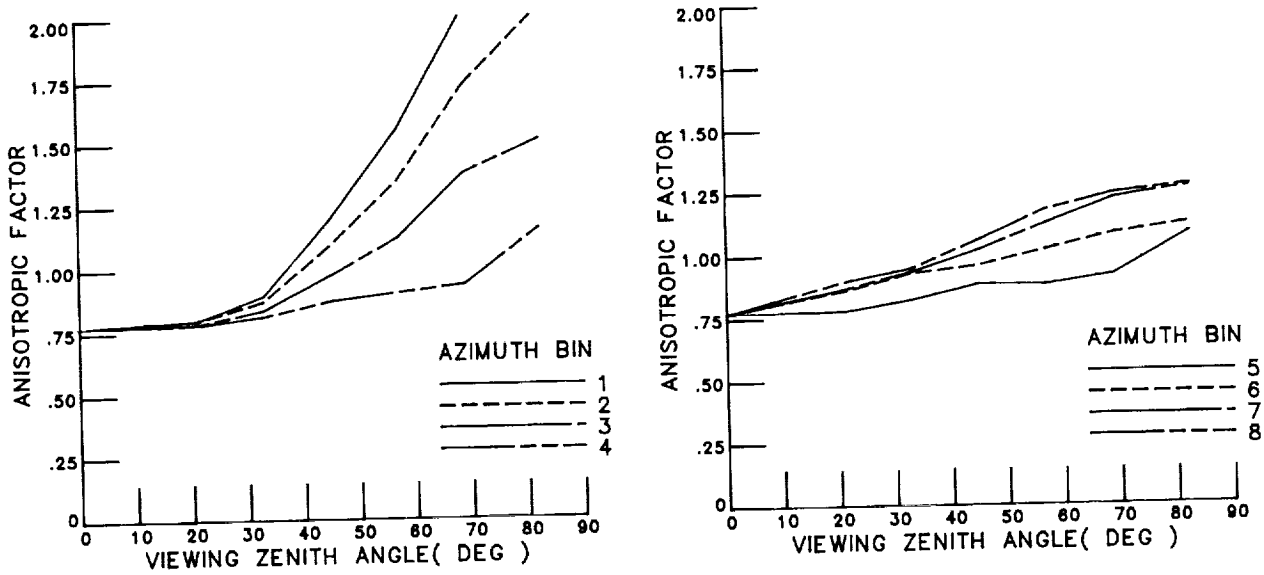
Figure 15. Continued.

SCENE TYPE : MOSTLY CLOUDY OVER OCEAN
DATA 1 - SW ANISOTROPIC FACTOR
2 - STANDARD DEVIATION OF SW RADIANCES(W/M**2/SR)
3 - CORRELATION OF LW AND SW RADIANCES
( ) - DATA SOURCE

SUN ZENITH : 53.1 - 60.0
MEAN ALBEDO : .3300 (18)
NORMALIZED ALBEDO : 1.2941 (18)

RELATIVE AZIMUTH

BIN NO.	ANGLE(DEG.)	1 0-9	2 9-30	3 30-60	4 60-90	5 90-120	6 120-150	7 150-171	8 171-180
VIEWING ZENITH BIN NO.	ANGLE(DEG.)								
1	0-15	.77 (11) 29.2 (11) -.454 (11)	.77 (11) 29.2 (11) -.454 (11)	.77 (11) 29.2 (11) -.454 (11)	.77 (11) 29.2 (11) -.454 (11)	.77 (11) 29.2 (11) -.454 (11)	.77 (11) 29.2 (11) -.454 (11)	.77 (11) 29.2 (11) -.454 (11)	.77 (11) 29.2 (11) -.454 (11)
2	15-27	.80 (11) 28.1 (11) -.508 (11)	.80 (11) 28.1 (11) -.390 (11)	.78 (11) 27.8 (11) -.454 (11)	.78 (11) 28.1 (11) -.441 (11)	.78 (11) 27.7 (11) -.406 (11)	.86 (11) 29.7 (11) -.416 (11)	.87 (11) 29.7 (11) -.364 (11)	.90 (11) 29.6 (11) -.446 (11)
3	27-39	.89 (10) 28.2 (10) -.434 (10)	.87 (11) 27.7 (11) -.443 (11)	.84 (11) 27.9 (11) -.446 (11)	.81 (11) 28.5 (11) -.446 (11)	.82 (11) 28.3 (11) -.402 (11)	.93 (11) 29.4 (11) -.352 (11)	.93 (11) 28.3 (11) -.370 (11)	.95 (10) 28.7 (10) -.344 (10)
4	39-51	1.19 (11) 26.7 (11) -.343 (11)	1.09 (11) 29.4 (11) -.424 (11)	.97 (11) 29.8 (11) -.443 (11)	.87 (11) 28.8 (11) -.451 (11)	.88 (11) 29.7 (11) -.472 (11)	.96 (11) 29.8 (11) -.362 (11)	1.02 (11) 28.9 (11) -.310 (11)	1.06 (11) 30.0 (11) -.303 (11)
5	51-63	1.55 (11) 30.0 (11) -.248 (11)	1.34 (11) 30.8 (11) -.371 (11)	1.12 (11) 32.2 (11) -.428 (11)	.90 (11) 28.5 (11) -.492 (11)	.88 (11) 27.9 (11) -.463 (11)	1.02 (11) 27.9 (11) -.357 (11)	1.12 (11) 27.7 (11) -.240 (11)	1.18 (11) 29.1 (11) -.217 (11)
6	63-75	2.02 (11) 32.4 (11) -.200 (11)	1.72 (11) 37.5 (11) -.289 (11)	1.37 (11) 35.9 (11) -.422 (11)	.93 (11) 28.5 (11) -.576 (11)	.92 (11) 28.6 (11) -.509 (11)	1.08 (11) 27.4 (11) -.303 (11)	1.22 (11) 25.9 (11) -.194 (11)	1.24 (11) 26.1 (11) -.198 (11)
7	75-90	2.40 (11) 35.7 (11) -.036 (11)	2.03 (11) 38.4 (11) -.214 (11)	1.51 (11) 36.0 (11) -.396 (11)	1.16 (5) 30.8 (5) -.456 (5)	1.08 (5) 28.4 (5) -.393 (5)	1.12 (11) 23.2 (11) -.218 (11)	1.26 (11) 22.3 (11) -.191 (11)	1.27 (11) 22.8 (11) -.110 (11)



(e) Solar-zenith-angle bin 5, 53.13° to 60.00°.

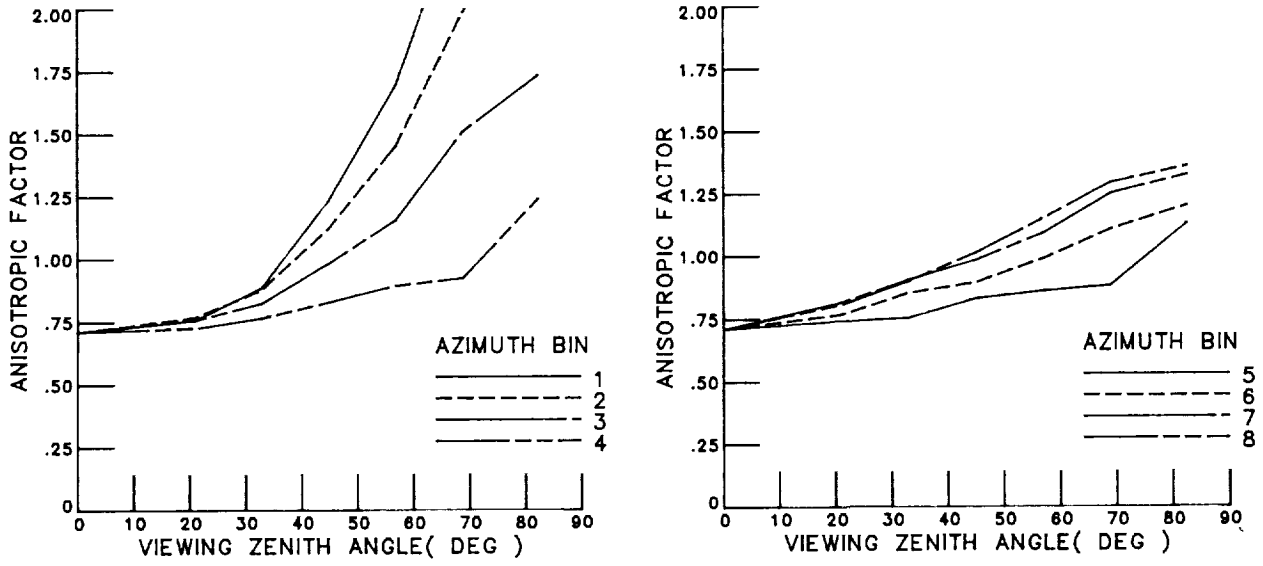
Figure 15. Continued.

SCENE TYPE : MOSTLY CLOUDY OVER OCEAN
DATA 1 - SW ANISOTROPIC FACTOR
2 - STANDARD DEVIATION OF SW RADIANCES(W/M**2/SR)
3 - CORRELATION OF LW AND SW RADIANCES
( ) - DATA SOURCE

SUN ZENITH : 60.0 - 66.4
MEAN ALBEDO : .3650 (18)
NORMALIZED ALBEDO : 1.4314 (18)

RELATIVE AZIMUTH

VIEWING ZENITH BIN NO.	ANGLE(DEG.)	BIN NO. 1 ANGLE(DEG.) 0-9	2 9-30	3 30-60	4 60-90	5 90-120	6 120-150	7 150-171	8 171-180
1	0-15	.71 (11)	.71 (11)	.71 (11)	.71 (11)	.71 (11)	.71 (11)	.71 (11)	.71 (11)
		22.2 (11)	22.2 (11)	22.2 (11)	22.2 (11)	22.2 (11)	22.2 (11)	22.2 (11)	22.2 (11)
		-.467 (11)	-.467 (11)	-.467 (11)	-.467 (11)	-.467 (11)	-.467 (11)	-.467 (11)	-.467 (11)
2	15-27	.76 (11)	.77 (11)	.76 (11)	.73 (11)	.74 (11)	.77 (11)	.82 (11)	.81 (11)
		22.2 (11)	21.0 (11)	21.5 (11)	21.4 (11)	22.0 (11)	21.9 (11)	22.1 (11)	22.2 (11)
		-.471 (11)	-.400 (11)	-.464 (11)	-.484 (11)	-.418 (11)	-.449 (11)	-.371 (11)	-.395 (11)
3	27-39	.89 (10)	.86 (11)	.83 (11)	.77 (11)	.76 (11)	.85 (11)	.91 (11)	.90 (10)
		22.8 (10)	22.4 (11)	22.2 (11)	20.0 (11)	20.1 (11)	21.3 (11)	21.8 (11)	19.5 (10)
		-.368 (10)	-.467 (11)	-.480 (11)	-.462 (11)	-.466 (11)	-.361 (11)	-.286 (11)	-.310 (10)
4	39-51	1.23 (11)	1.12 (11)	.98 (11)	.83 (11)	.83 (11)	.90 (11)	.98 (11)	1.01 (11)
		24.5 (11)	24.6 (11)	24.5 (11)	21.3 (11)	22.3 (11)	21.4 (11)	21.0 (11)	23.3 (11)
		-.374 (11)	-.423 (11)	-.454 (11)	-.393 (11)	-.440 (11)	-.315 (11)	-.267 (11)	-.333 (11)
5	51-63	1.69 (11)	1.45 (11)	1.16 (11)	.89 (11)	.86 (11)	.99 (11)	1.09 (11)	1.15 (11)
		26.4 (11)	26.4 (11)	27.1 (11)	22.3 (11)	21.7 (11)	22.0 (11)	20.8 (11)	21.3 (11)
		-.210 (11)	-.332 (11)	-.408 (11)	-.457 (11)	-.438 (11)	-.277 (11)	-.271 (11)	-.243 (11)
6	63-75	2.44 (11)	1.99 (11)	1.51 (11)	.92 (11)	.88 (11)	1.11 (11)	1.25 (11)	1.30 (11)
		40.2 (11)	37.6 (11)	33.5 (11)	22.7 (11)	23.1 (11)	21.4 (11)	20.4 (11)	21.2 (11)
		-.140 (11)	-.265 (11)	-.367 (11)	-.443 (11)	-.461 (11)	-.273 (11)	-.241 (11)	-.181 (11)
7	75-90	3.01 (11)	2.42 (11)	1.74 (11)	1.24 (5)	1.13 (5)	1.20 (11)	1.33 (11)	1.36 (11)
		37.5 (11)	43.5 (11)	35.6 (11)	26.2 (5)	23.5 (5)	18.1 (11)	17.9 (11)	18.5 (11)
		-.032 (11)	-.204 (11)	-.295 (11)	-.334 (5)	-.309 (5)	-.087 (11)	-.124 (11)	-.108 (11)



(f) Solar-zenith-angle bin 6, 60.00° to 66.42°.

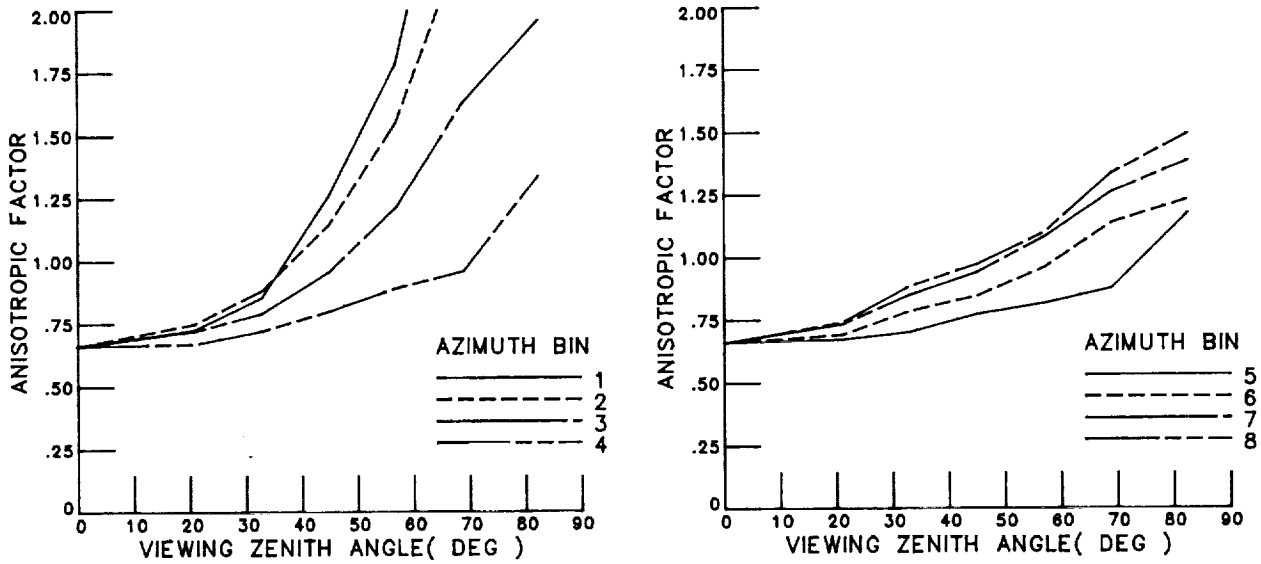
Figure 15. Continued.

SCENE TYPE : MOSTLY CLOUDY OVER OCEAN
DATA 1 - SW ANISOTROPIC FACTOR
2 - STANDARD DEVIATION OF SW RADIANCES(W/M**2/SR)
3 - CORRELATION OF LW AND SW RADIANCES
( ) - DATA SOURCE

SUN ZENITH : 66.4 - 72.5
MEAN ALBEDO : .4000 (18)
NORMALIZED ALBEDO : 1.5686 (18)

RELATIVE AZIMUTH

BIN NO. / ANGLE(DEG.)		1 0-9	2 9-30	3 30-60	4 60-90	5 90-120	6 120-150	7 150-171	8 171-180
VIEWING ZENITH BIN NO.	ANGLE(DEG.)								
1	0-15	.66 (11)	.66 (11)	.66 (11)	.66 (11)	.66 (11)	.66 (11)	.66 (11)	.66 (11)
		15.4 (11)	15.4 (11)	15.4 (11)	15.4 (11)	15.4 (11)	15.4 (11)	15.4 (11)	15.4 (11)
		-.446 (11)	-.446 (11)	-.446 (11)	-.446 (11)	-.446 (11)	-.446 (11)	-.446 (11)	-.446 (11)
2	15-27	.72 (11)	.75 (11)	.72 (11)	.67 (11)	.67 (11)	.69 (11)	.73 (11)	.74 (11)
		16.0 (11)	16.2 (11)	16.1 (11)	15.1 (11)	14.9 (11)	14.9 (11)	15.8 (11)	16.0 (11)
		-.466 (11)	-.427 (11)	-.479 (11)	-.453 (11)	-.439 (11)	-.427 (11)	-.401 (11)	-.394 (11)
3	27-39	.85 (10)	.88 (11)	.79 (11)	.72 (11)	.70 (11)	.79 (11)	.85 (11)	.89 (10)
		17.1 (10)	16.7 (11)	15.9 (11)	14.9 (11)	14.5 (11)	15.5 (11)	15.8 (11)	15.4 (10)
		-.431 (10)	-.377 (11)	-.461 (11)	-.383 (11)	-.475 (11)	-.356 (11)	-.274 (11)	-.301 (10)
4	39-51	1.26 (11)	1.14 (11)	.96 (11)	.80 (11)	.77 (11)	.85 (11)	.94 (11)	.97 (11)
		18.8 (11)	18.6 (11)	18.1 (11)	16.4 (11)	15.2 (11)	15.3 (11)	16.0 (11)	15.9 (11)
		-.339 (11)	-.344 (11)	-.383 (11)	-.440 (11)	-.382 (11)	-.337 (11)	-.268 (11)	-.293 (11)
5	51-63	1.76 (11)	1.55 (11)	1.21 (11)	.89 (11)	.82 (11)	.96 (11)	1.08 (11)	1.10 (11)
		22.9 (11)	23.4 (11)	21.8 (11)	17.2 (11)	15.0 (11)	15.5 (11)	15.0 (11)	15.2 (11)
		-.152 (11)	-.255 (11)	-.319 (11)	-.420 (11)	-.386 (11)	-.210 (11)	-.193 (11)	-.240 (11)
6	63-75	2.93 (11)	2.26 (11)	1.63 (11)	.96 (11)	.86 (11)	1.14 (11)	1.26 (11)	1.34 (11)
		45.5 (11)	38.2 (11)	28.0 (11)	18.9 (11)	16.2 (11)	16.5 (11)	14.9 (11)	16.4 (11)
		-.035 (11)	-.166 (11)	-.239 (11)	-.426 (11)	-.452 (11)	-.204 (11)	-.213 (11)	-.161 (11)
7	75-90	3.84 (10)	2.89 (11)	1.96 (11)	1.34 (5)	1.16 (5)	1.23 (11)	1.39 (11)	1.49 (11)
		51.5 (10)	43.1 (11)	32.4 (11)	22.6 (5)	18.2 (5)	14.2 (11)	13.9 (11)	14.6 (11)
		.104 (10)	-.057 (11)	-.176 (11)	-.298 (5)	-.306 (5)	-.157 (11)	-.147 (11)	-.076 (11)



(g) Solar-zenith-angle bin 7, 66.42° to 72.54°.

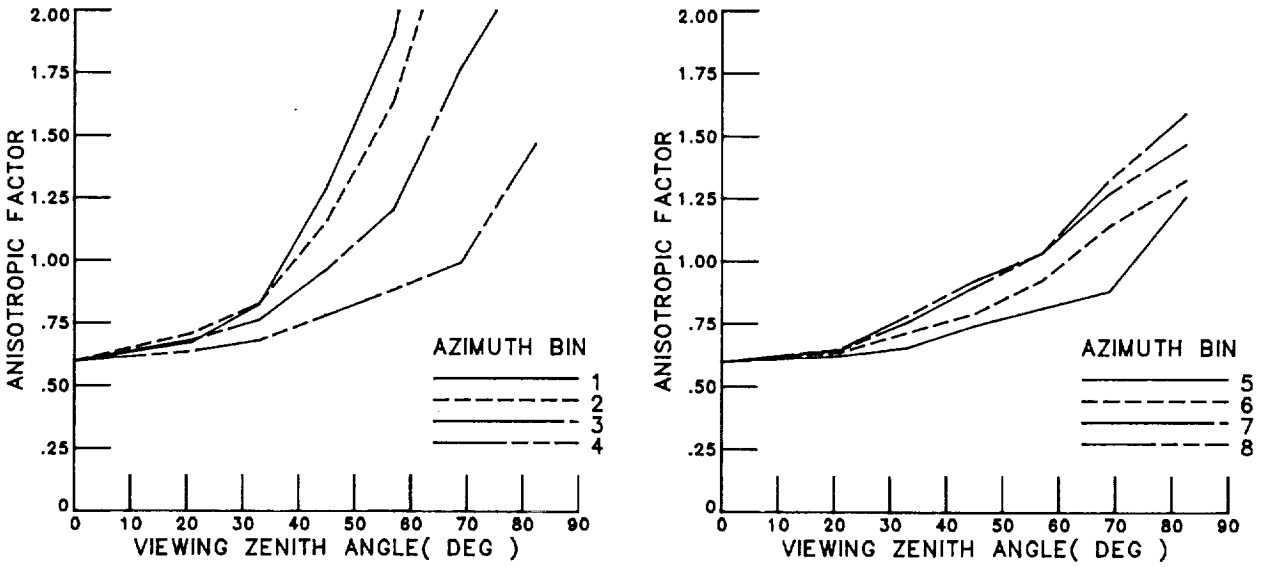
Figure 15. Continued.

SCENE TYPE : MOSTLY CLOUDY OVER OCEAN
DATA 1 - SW ANISOTROPIC FACTOR
2 - STANDARD DEVIATION OF SW RADIANCES(W/M**2/SR)
3 - CORRELATION OF LW AND SW RADIANCES
( ) - DATA SOURCE

SUN ZENITH : 72.5 - 78.5
MEAN ALBEDO : .4480 (18)
NORMALIZED ALBEDO : 1.7569 (18)

RELATIVE AZIMUTH

BIN NO. / ANGLE(DEG.)		1 0-9	2 9-30	3 30-60	4 60-90	5 90-120	6 120-150	7 150-171	8 171-180
VIEWING ZENITH BIN NO.	ANGLE(DEG.)								
1	0-15	.66 (11)	.60 (11)	.60 (11)	.60 (11)	.60 (11)	.60 (11)	.60 (11)	.60 (11)
		9.8 (11)	9.8 (11)	9.8 (11)	9.8 (11)	9.8 (11)	9.8 (11)	9.8 (11)	9.8 (11)
		-.453 (11)	-.453 (11)	-.453 (11)	-.453 (11)	-.453 (11)	-.453 (11)	-.453 (11)	-.453 (11)
2	15-27	.67 (11)	.71 (11)	.68 (11)	.64 (11)	.62 (11)	.64 (11)	.65 (11)	.65 (11)
		10.6 (11)	10.1 (11)	10.6 (11)	10.0 (11)	9.8 (11)	9.6 (11)	9.5 (11)	9.8 (11)
		-.515 (11)	-.448 (11)	-.472 (11)	-.476 (11)	-.460 (11)	-.441 (11)	-.411 (11)	-.374 (11)
3	27-39	.82 (10)	.83 (11)	.76 (11)	.68 (11)	.65 (11)	.72 (11)	.76 (11)	.78 (10)
		10.6 (10)	10.9 (11)	10.7 (11)	9.8 (11)	9.3 (11)	9.6 (11)	9.6 (11)	9.2 (10)
		-.401 (10)	-.466 (11)	-.481 (11)	-.434 (11)	-.435 (11)	-.408 (11)	-.284 (11)	-.365 (10)
4	39-51	1.29 (11)	1.15 (11)	.96 (11)	.78 (11)	.74 (11)	.79 (11)	.90 (11)	.92 (11)
		13.4 (11)	13.3 (11)	12.7 (11)	11.2 (11)	10.5 (11)	9.5 (11)	9.8 (11)	10.2 (11)
		-.240 (11)	-.352 (11)	-.397 (11)	-.411 (11)	-.412 (11)	-.364 (11)	-.260 (11)	-.251 (11)
5	51-63	1.96 (11)	1.64 (11)	1.20 (11)	.88 (11)	.81 (11)	.93 (11)	1.04 (11)	1.03 (11)
		20.3 (11)	18.8 (11)	15.1 (11)	11.4 (11)	10.5 (11)	10.6 (11)	9.9 (11)	9.3 (11)
		-.127 (11)	-.189 (11)	-.246 (11)	-.319 (11)	-.398 (11)	-.243 (11)	-.252 (11)	-.253 (11)
6	63-75	3.29 (11)	2.50 (11)	1.77 (11)	.99 (11)	.88 (11)	1.14 (11)	1.27 (11)	1.33 (11)
		46.1 (11)	34.4 (11)	24.4 (11)	12.7 (11)	11.2 (11)	11.8 (11)	10.8 (11)	11.6 (11)
		-.103 (11)	-.163 (11)	-.130 (11)	-.329 (11)	-.385 (11)	-.226 (11)	-.138 (11)	-.193 (11)
7	75-90	4.97 (10)	3.38 (11)	2.26 (11)	1.47 (5)	1.26 (5)	1.33 (11)	1.47 (11)	1.59 (11)
		56.5 (10)	41.7 (11)	27.2 (11)	17.2 (5)	13.7 (5)	10.9 (11)	10.8 (11)	12.1 (11)
		-.099 (10)	-.064 (11)	-.026 (11)	-.179 (5)	-.207 (5)	-.032 (11)	-.102 (11)	.032 (11)



(h) Solar-zenith-angle bin 8, 72.54° to 78.46°.

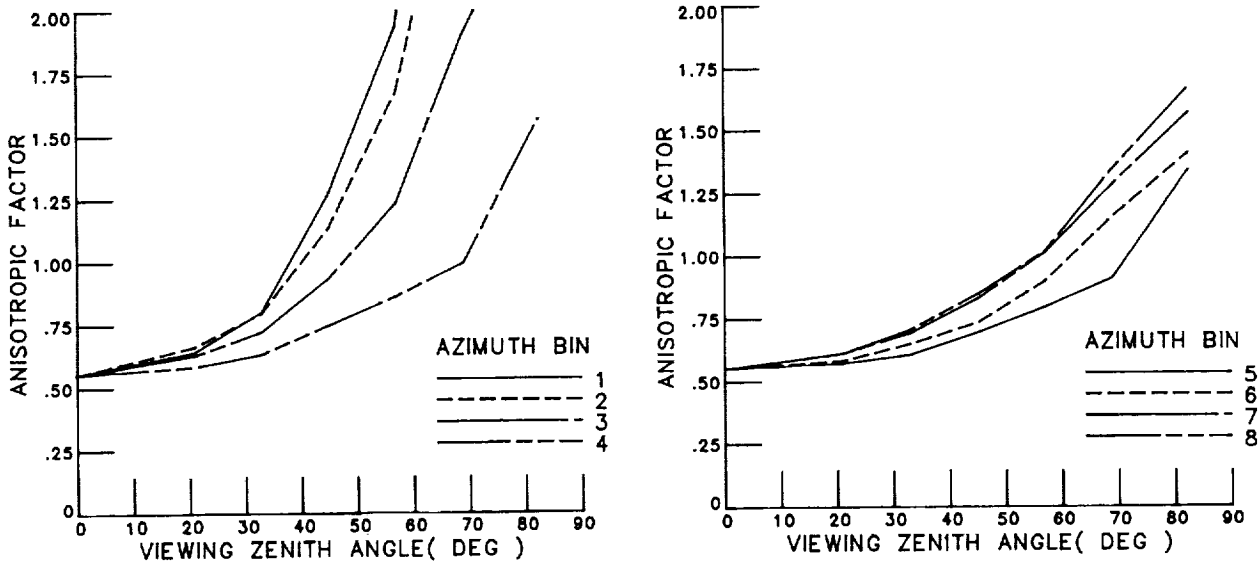
Figure 15. Continued.

SCENE TYPE : MOSTLY CLOUDY OVER OCEAN
DATA 1 - SW ANISOTROPIC FACTOR
2 - STANDARD DEVIATION OF SW RADIANCES(W/M**2/SR)
3 - CORRELATION OF LW AND SW RADIANCES
( ) - DATA SOURCE

SUN ZENITH : 78.5 - 84.3
MEAN ALBEDO : .5006 (18)
NORMALIZED ALBEDO : 1.9608 (18)

RELATIVE AZIMUTH

BIN NO. / ANGLE(DEG.)		1 0-9	2 9-30	3 30-60	4 60-90	5 90-120	6 120-150	7 150-171	8 171-180
VIEWING ZENITH BIN NO.	ANGLE(DEG.)								
1	0-15	.55 (11)	.55 (11)	.55 (11)	.55 (11)	.55 (11)	.55 (11)	.55 (11)	.55 (11)
		5.6 (11)	5.6 (11)	5.6 (11)	5.6 (11)	5.6 (11)	5.6 (11)	5.6 (11)	5.6 (11)
		-.432 (11)	-.432 (11)	-.432 (11)	-.432 (11)	-.432 (11)	-.432 (11)	-.432 (11)	-.432 (11)
2	15-27	.64 (11)	.66 (11)	.63 (11)	.58 (11)	.57 (11)	.58 (11)	.61 (11)	.61 (11)
		6.1 (11)	5.9 (11)	5.9 (11)	5.6 (11)	5.6 (11)	5.7 (11)	5.7 (11)	5.8 (11)
		-.355 (11)	-.413 (11)	-.388 (11)	-.433 (11)	-.354 (11)	-.361 (11)	-.291 (11)	-.306 (11)
3	27-39	.80 (10)	.80 (11)	.72 (11)	.63 (11)	.61 (11)	.65 (11)	.69 (11)	.71 (10)
		6.9 (10)	6.6 (11)	6.0 (11)	5.9 (11)	5.1 (11)	5.6 (11)	5.6 (11)	5.4 (10)
		-.238 (10)	-.360 (11)	-.401 (11)	-.314 (11)	-.357 (11)	-.381 (11)	-.257 (11)	-.134 (10)
4	39-51	1.27 (10)	1.14 (11)	.93 (11)	.75 (11)	.69 (11)	.73 (11)	.83 (11)	.85 (11)
		10.6 (10)	8.5 (11)	7.9 (11)	5.9 (11)	5.7 (11)	5.7 (11)	5.7 (11)	6.1 (11)
		-.161 (10)	-.261 (11)	-.296 (11)	-.312 (11)	-.284 (11)	-.315 (11)	-.232 (11)	-.114 (11)
5	51-63	1.94 (10)	1.67 (11)	1.23 (11)	.86 (11)	.79 (11)	.90 (11)	1.01 (11)	1.02 (10)
		14.2 (10)	12.3 (11)	11.0 (11)	6.7 (11)	5.9 (11)	6.0 (11)	5.9 (11)	5.6 (10)
		-.113 (10)	-.114 (11)	-.057 (11)	-.290 (11)	-.316 (11)	-.198 (11)	-.171 (11)	-.075 (10)
6	63-75	3.66 (11)	2.82 (11)	1.91 (11)	.99 (11)	.91 (11)	1.15 (11)	1.28 (11)	1.34 (11)
		39.8 (11)	26.6 (11)	17.0 (11)	6.7 (11)	6.2 (11)	6.9 (11)	6.9 (11)	7.4 (11)
		-.144 (11)	-.090 (11)	-.066 (11)	-.244 (11)	-.188 (11)	-.074 (11)	-.062 (11)	-.127 (11)
7	75-90	6.04 (10)	4.11 (11)	2.50 (10)	1.56 (5)	1.34 (5)	1.41 (10)	1.57 (11)	1.67 (10)
		50.1 (10)	35.9 (11)	20.9 (10)	11.6 (5)	9.1 (5)	7.6 (10)	7.6 (11)	8.6 (10)
		-.118 (10)	-.016 (11)	.109 (10)	-.083 (5)	-.071 (5)	.015 (10)	.024 (11)	.042 (10)



(i) Solar-zenith-angle bin 9, 78.46° to 84.26°.

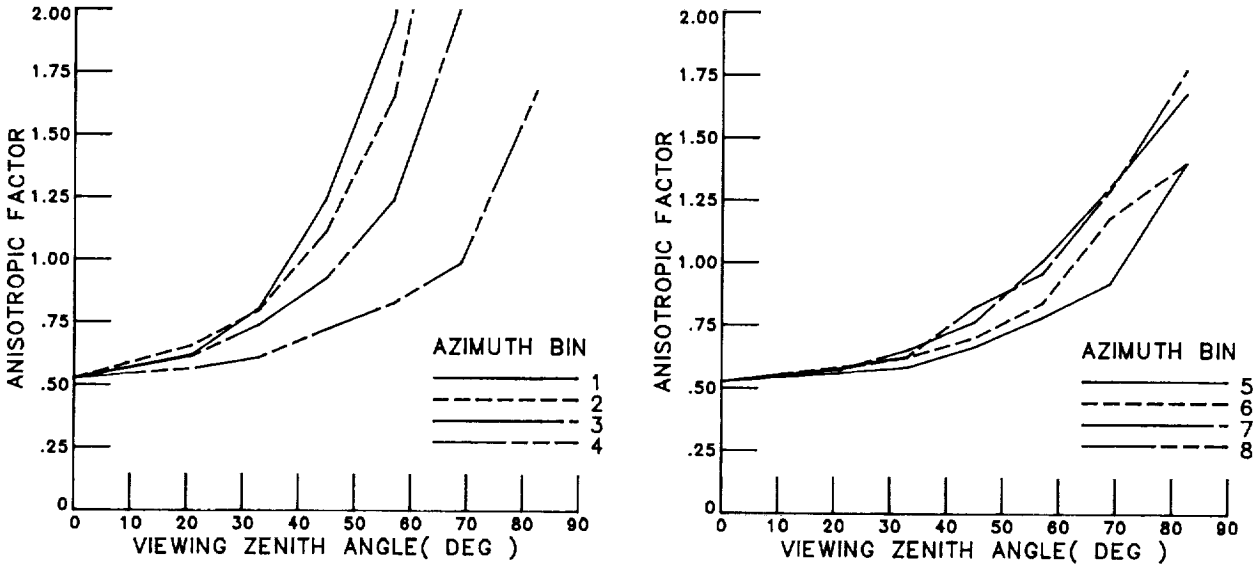
Figure 15. Continued.

SCENE TYPE : MOSTLY CLOUDY OVER OCEAN
DATA 1 - SW ANISOTROPIC FACTOR
2 - STANDARD DEVIATION OF SW RADIANCES(W/M**2/SR)
3 - CORRELATION OF LW AND SW RADIANCES
( ) - DATA SOURCE

SUN ZENITH : 84.3 - 90.0
MEAN ALBEDO : .5600 (18)
NORMALIZED ALBEDO : 2.1561 (18)

RELATIVE AZIMUTH

BIN NO. / ANGLE(DEG.)		1 0-9	2 9-30	3 30-60	4 60-90	5 90-120	6 120-150	7 150-171	8 171-180
VIEWING ZENITH BIN NO.	ANGLE(DEG.)								
1	0-15	.53 (11)	.53 (11)	.53 (11)	.53 (11)	.53 (11)	.53 (11)	.53 (11)	.53 (11)
		2.0 (11)	2.0 (11)	2.0 (11)	2.0 (11)	2.0 (11)	2.0 (11)	2.0 (11)	2.0 (11)
		-.351 (11)	-.351 (11)	-.351 (11)	-.351 (11)	-.351 (11)	-.351 (11)	-.351 (11)	-.351 (11)
2	15-27	.62 (10)	.66 (10)	.61 (10)	.57 (10)	.56 (10)	.58 (10)	.57 (10)	.58 (10)
		2.2 (10)	2.3 (10)	2.5 (10)	2.4 (10)	2.3 (10)	2.2 (10)	2.0 (10)	2.0 (10)
		-.365 (10)	-.147 (10)	-.402 (10)	-.287 (10)	-.359 (10)	-.270 (10)	-.324 (10)	-.246 (10)
3	27-39	.80 (9)	.80 (10)	.74 (10)	.61 (10)	.58 (10)	.62 (10)	.65 (10)	.63 (8)
		2.6 (9)	2.5 (10)	2.4 (10)	2.4 (10)	2.2 (10)	1.9 (10)	2.0 (10)	1.9 (8)
		-.211 (9)	-.240 (10)	-.307 (10)	-.333 (10)	-.349 (10)	-.221 (10)	-.172 (10)	-.203 (8)
4	39-51	1.24 (10)	1.12 (10)	.93 (10)	.72 (10)	.67 (10)	.70 (10)	.77 (10)	.82 (10)
		3.3 (10)	3.3 (10)	3.0 (10)	2.2 (10)	2.3 (10)	2.2 (10)	2.1 (10)	2.2 (10)
		.025 (10)	-.259 (10)	-.135 (10)	-.301 (10)	-.206 (10)	-.179 (10)	-.130 (10)	-.038 (10)
5	51-63	1.95 (9)	1.65 (10)	1.24 (10)	.83 (10)	.78 (10)	.84 (10)	1.01 (10)	.96 (10)
		6.1 (9)	5.3 (10)	4.1 (10)	2.4 (10)	2.4 (10)	2.2 (10)	2.2 (10)	2.5 (10)
		-.006 (9)	-.049 (10)	.044 (10)	-.266 (10)	-.213 (10)	-.152 (10)	-.174 (10)	-.208 (10)
6	63-75	3.86 (10)	2.97 (10)	2.02 (10)	.99 (10)	.92 (10)	1.18 (10)	1.31 (10)	1.29 (10)
		19.4 (10)	10.8 (10)	7.1 (10)	2.6 (10)	2.4 (10)	3.2 (10)	2.8 (10)	3.0 (10)
		-.245 (10)	-.035 (10)	-.007 (10)	-.224 (10)	-.122 (10)	.077 (10)	-.174 (10)	-.028 (10)
7	75-90	6.19 (9)	4.46 (10)	2.86 (9)	1.68 (5)	1.40 (5)	1.41 (10)	1.68 (10)	1.78 (9)
		19.2 (9)	15.3 (10)	7.7 (9)	4.3 (5)	3.3 (5)	2.5 (10)	3.0 (10)	2.6 (9)
		-.114 (9)	-.219 (10)	.201 (9)	-.029 (5)	.004 (5)	.095 (10)	.076 (10)	.273 (9)



(j) Solar-zenith-angle bin 10, 84.26° to 90.00°.

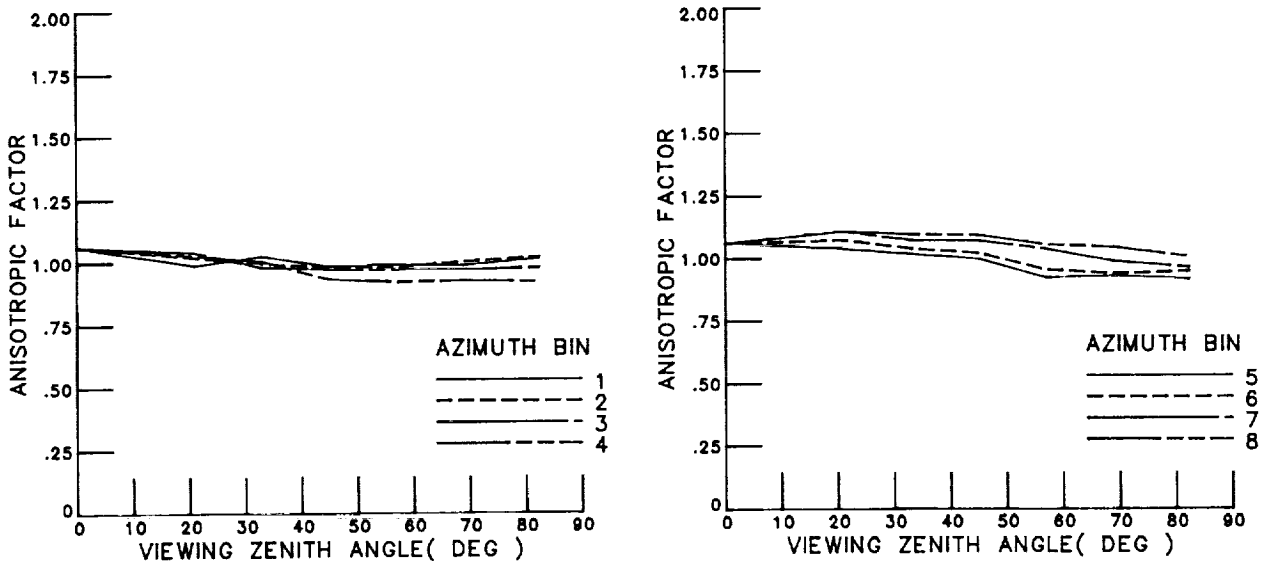
Figure 15. Concluded.

SCENE TYPE : MOSTLY CLOUDY OVER LAND OR DESERT
DATA 1 - SW ANISOTROPIC FACTOR
2 - STANDARD DEVIATION OF SW RADIANCES(W/M**2/SR)
3 - CORRELATION OF LW AND SW RADIANCES
( ) - DATA SOURCE

SUN ZENITH : .C - 25.8
MEAN ALBEDO : .3C00 (18)
NORMALIZED ALBEDO : 1.0C00 (18)

RELATIVE AZIMUTH

BIN NO. / ANGLE(DEG.)		1 0-9	2 9-30	3 30-60	4 60-90	5 90-120	6 120-150	7 150-171	8 171-180
VIEWING ZENITH BIN NO.	ANGLE(DEG.)								
1	0-15	1.06 (11)	1.06 (11)	1.06 (11)	1.06 (11)	1.06 (11)	1.06 (11)	1.06 (11)	1.06 (11)
		39.8 (11)	39.8 (11)	39.8 (11)	39.8 (11)	39.8 (11)	39.8 (11)	39.8 (11)	39.8 (11)
		-.433 (11)	-.433 (11)	-.433 (11)	-.433 (11)	-.433 (11)	-.433 (11)	-.433 (11)	-.433 (11)
2	15-27	.99 (11)	1.02 (11)	1.04 (11)	1.03 (11)	1.04 (11)	1.07 (11)	1.11 (11)	1.11 (11)
		37.5 (11)	39.5 (11)	42.9 (11)	41.0 (11)	39.4 (11)	40.3 (11)	39.8 (11)	41.4 (11)
		-.463 (11)	-.444 (11)	-.501 (11)	-.480 (11)	-.44E (11)	-.477 (11)	-.449 (11)	-.410 (11)
3	27-39	1.02 (10)	1.00 (11)	.98 (11)	1.01 (11)	1.02 (11)	1.04 (11)	1.07 (11)	1.10 (11)
		42.2 (10)	38.8 (11)	37.1 (11)	37.9 (11)	37.E (11)	38.1 (11)	37.3 (11)	41.1 (11)
		-.554 (10)	-.525 (11)	-.454 (11)	-.460 (11)	-.40E (11)	-.438 (11)	-.348 (11)	-.381 (11)
4	39-51	.98 (11)	.98 (11)	.97 (11)	.93 (11)	1.0C (11)	1.02 (11)	1.07 (11)	1.09 (11)
		36.5 (11)	38.1 (11)	35.6 (11)	35.0 (11)	37.E (11)	36.9 (11)	37.1 (11)	38.8 (11)
		-.483 (11)	-.515 (11)	-.468 (11)	-.449 (11)	-.46C (11)	-.460 (11)	-.384 (11)	-.433 (11)
5	51-63	.99 (10)	.98 (11)	.97 (11)	.92 (11)	.92 (11)	.95 (11)	1.04 (11)	1.05 (11)
		35.2 (10)	34.1 (11)	33.5 (11)	31.2 (11)	34.2 (11)	32.1 (11)	34.3 (11)	35.2 (11)
		-.469 (10)	-.499 (11)	-.530 (11)	-.408 (11)	-.49E (11)	-.439 (11)	-.355 (11)	-.339 (11)
6	63-75	.99 (11)	1.00 (11)	.97 (11)	.93 (11)	.93 (11)	.94 (11)	.99 (11)	1.04 (11)
		30.3 (11)	30.6 (11)	30.5 (11)	28.6 (11)	30.3 (11)	29.5 (11)	29.2 (11)	31.7 (11)
		-.396 (11)	-.461 (11)	-.482 (11)	-.491 (11)	-.52E (11)	-.443 (11)	-.373 (11)	-.399 (11)
7	75-90	1.01 (10)	1.02 (11)	.98 (11)	.92 (11)	.91 (11)	.95 (11)	.96 (11)	1.01 (11)
		29.2 (10)	29.0 (11)	28.1 (11)	25.5 (11)	27.1 (11)	24.5 (11)	25.4 (11)	26.5 (11)
		-.471 (10)	-.449 (11)	-.503 (11)	-.485 (11)	-.48? (11)	-.423 (11)	-.440 (11)	-.371 (11)



(a) Solar-zenith-angle bin 1, 0° to 25.84°.

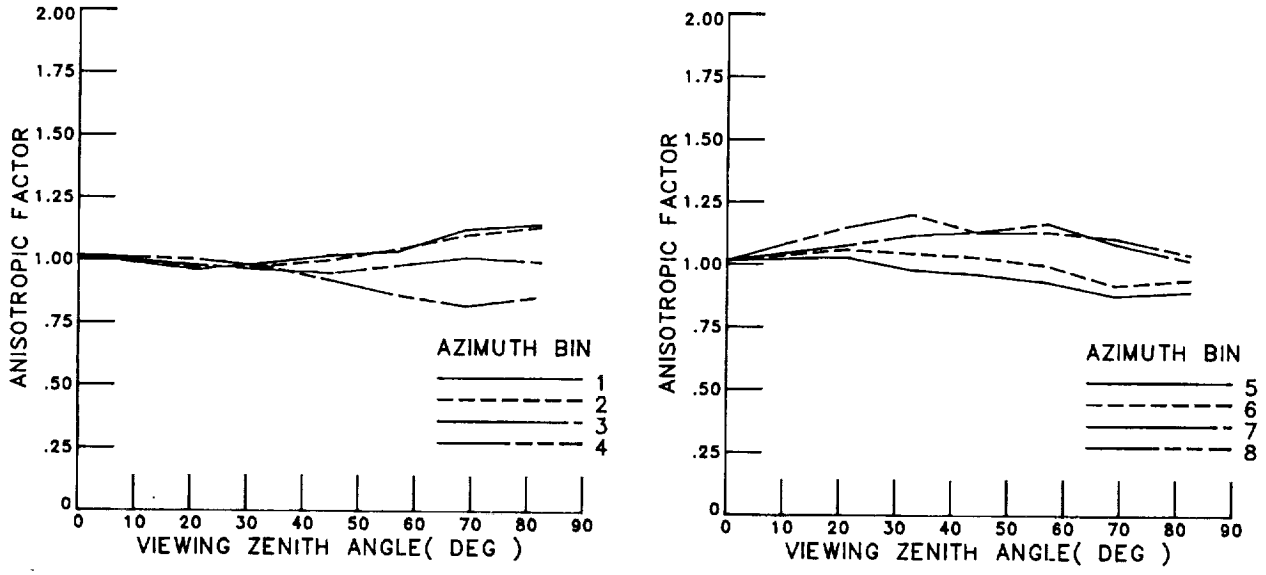
Figure 16. Bidirectional model for mostly cloudy over land or desert. (See table 5 for explanation of data sources.)

SCENE TYPE : MOSTLY CLOUDY OVER LAND OR DESERT
DATA 1 - SW ANISOTROPIC FACTOR
2 - STANDARD DEVIATION OF SW RADIANCES(W/M**2/SR)
3 - CORRELATION OF LW AND SW RADIANCES
( ) - DATA SOURCE

SUN ZENITH : 25.8 - 36.9
MEAN ALBEDO : .3270 (18)
NORMALIZED ALBEDO : 1.0900 (18)

RELATIVE AZIMUTH

BIN NO. / ANGLE(DEG.)	1 0-9	2 9-30	3 30-60	4 60-90	5 90-120	6 120-150	7 150-171	8 171-180
VIEWING ZENITH BIN NO. / ANGLE(DEG.)								
1 0-15	1.02 (11) 41.9 (11) -.426 (11)	1.02 (11) 41.9 (11) -.426 (11)	1.02 (11) 41.9 (11) -.426 (11)	1.02 (11) 41.9 (11) -.426 (11)	1.02 (11) 41.9 (11) -.426 (11)	1.02 (11) 41.9 (11) -.426 (11)	1.02 (11) 41.9 (11) -.426 (11)	1.02 (11) 41.9 (11) -.426 (11)
2 15-27	.96 (10) 40.1 (10) -.394 (10)	.97 (11) 40.4 (11) -.465 (11)	.98 (11) 40.4 (11) -.387 (11)	1.00 (11) 40.3 (11) -.390 (11)	1.03 (11) 41.4 (11) -.356 (11)	1.06 (11) 39.7 (11) -.353 (11)	1.08 (11) 39.3 (11) -.345 (11)	1.15 (10) 40.2 (10) -.341 (10)
3 27-39	.99 (10) 36.0 (10) -.551 (10)	.98 (10) 37.3 (10) -.508 (10)	.96 (11) 36.8 (11) -.345 (11)	.98 (10) 37.1 (10) -.378 (10)	.98 (11) 37.7 (11) -.432 (11)	1.04 (11) 37.4 (11) -.342 (11)	1.12 (10) 37.0 (10) -.293 (10)	1.20 (10) 38.6 (10) -.334 (10)
4 39-51	1.02 (11) 37.9 (11) -.454 (11)	1.00 (11) 38.7 (11) -.466 (11)	.95 (11) 36.9 (11) -.456 (11)	.92 (11) 35.5 (11) -.465 (11)	.96 (11) 35.7 (11) -.374 (11)	1.03 (11) 39.3 (11) -.308 (11)	1.13 (11) 37.6 (11) -.331 (11)	1.13 (11) 37.7 (11) -.244 (11)
5 51-63	1.04 (10) 33.9 (10) -.467 (10)	1.05 (11) 34.3 (11) -.469 (11)	.98 (11) 33.6 (11) -.436 (11)	.86 (10) 29.0 (10) -.380 (10)	.93 (11) 31.7 (11) -.428 (11)	1.00 (11) 34.0 (11) -.303 (11)	1.17 (11) 33.2 (11) -.263 (11)	1.13 (10) 32.2 (10) -.242 (10)
6 63-75	1.13 (10) 34.9 (10) -.421 (10)	1.10 (11) 33.2 (11) -.437 (11)	1.01 (11) 32.6 (11) -.464 (11)	.82 (10) 25.3 (10) -.365 (10)	.88 (11) 30.0 (11) -.461 (11)	.92 (11) 30.7 (11) -.323 (11)	1.08 (11) 30.2 (11) -.161 (11)	1.11 (11) 30.3 (11) -.183 (11)
7 75-90	1.15 (10) 28.8 (10) -.256 (10)	1.14 (10) 29.6 (10) -.446 (10)	1.00 (11) 28.5 (11) -.428 (11)	.66 (10) 24.9 (10) -.386 (10)	.89 (5) 27.7 (5) -.402 (5)	.94 (6) 28.3 (6) -.310 (6)	1.02 (11) 26.5 (11) -.253 (11)	1.04 (11) 25.4 (11) -.197 (11)



(b) Solar-zenith-angle bin 2, 25.84° to 36.87°.

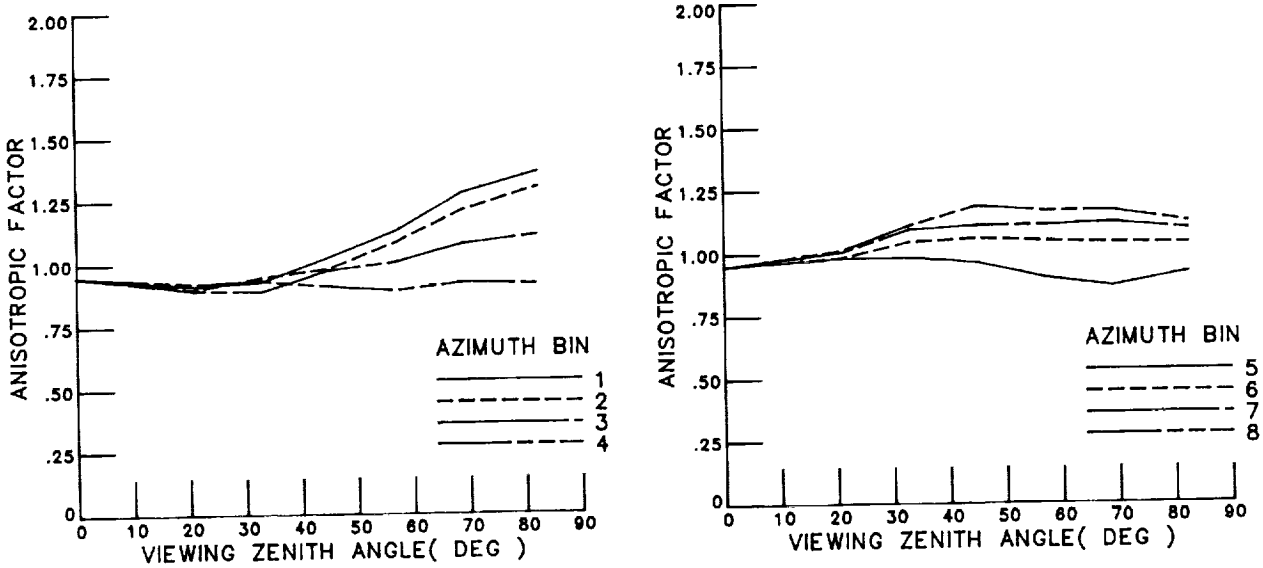
Figure 16. Continued.

SCENE TYPE : MOSTLY CLOUDY OVER LAND OR DESERT
DATA 1 - SW ANISOTROPIC FACTOR
2 - STANDARD DEVIATION OF SW RADIANCES(W/M**2/SR)
3 - CORRELATION OF LW AND SW RADIANCES
( ) - DATA SOURCE

SUN ZENITH : 36.9 - 45.6
MEAN ALBEDO : .3550 (18)
NORMALIZED ALBEDO : 1.1833 (18)

RELATIVE AZIMUTH

BIN NO. / ANGLE(DEG.)		1 0-9	2 9-30	3 30-60	4 60-90	5 90-120	6 120-150	7 150-171	8 171-180
VIEWING ZENITH BIN NO.	ANGLE(DEG.)								
1	0-15	.95 (11)	.95 (11)	.95 (11)	.95 (11)	.95 (11)	.95 (11)	.95 (11)	.95 (11)
		38.4 (11)	38.4 (11)	38.4 (11)	38.4 (11)	38.4 (11)	38.4 (11)	38.4 (11)	38.4 (11)
		-.373 (11)	-.373 (11)	-.373 (11)	-.373 (11)	-.373 (11)	-.373 (11)	-.373 (11)	-.373 (11)
2	15-27	.94 (10)	.90 (11)	.90 (11)	.92 (11)	.98 (11)	.99 (11)	1.01 (11)	1.01 (10)
		34.5 (10)	36.1 (11)	35.5 (11)	36.3 (11)	39.3 (11)	38.3 (11)	36.8 (11)	36.2 (10)
		-.383 (10)	-.455 (11)	-.374 (11)	-.336 (11)	-.315 (11)	-.331 (11)	-.331 (11)	-.293 (10)
3	27-39	.93 (10)	.95 (10)	.89 (10)	.93 (10)	.98 (11)	1.05 (10)	1.09 (10)	1.11 (10)
		32.1 (10)	36.1 (10)	33.1 (10)	36.1 (10)	35.8 (11)	35.4 (10)	36.3 (10)	35.9 (10)
		-.520 (10)	-.402 (10)	-.434 (10)	-.277 (10)	-.370 (11)	-.332 (10)	-.207 (10)	-.242 (10)
4	39-51	1.02 (10)	.98 (11)	.97 (11)	.91 (11)	.96 (11)	1.06 (11)	1.11 (11)	1.19 (11)
		36.3 (10)	34.7 (11)	35.3 (11)	33.8 (11)	31.6 (11)	36.3 (11)	33.6 (11)	34.3 (11)
		-.425 (10)	-.397 (11)	-.436 (11)	-.362 (11)	-.407 (11)	-.243 (11)	-.196 (11)	-.202 (11)
5	51-63	1.13 (10)	1.08 (11)	1.01 (11)	.89 (10)	.90 (11)	1.05 (10)	1.11 (11)	1.17 (10)
		33.4 (10)	33.8 (11)	34.0 (11)	28.6 (10)	30.3 (11)	33.0 (10)	31.3 (11)	32.9 (10)
		-.349 (10)	-.350 (11)	-.368 (11)	-.294 (10)	-.330 (11)	-.200 (10)	-.120 (11)	-.125 (10)
6	63-75	1.26 (10)	1.21 (11)	1.08 (11)	.92 (10)	.87 (11)	1.04 (10)	1.12 (11)	1.17 (11)
		34.6 (10)	34.7 (11)	31.6 (11)	31.5 (10)	29.6 (11)	32.9 (10)	30.1 (11)	30.2 (11)
		-.301 (10)	-.422 (11)	-.402 (11)	-.441 (10)	-.369 (11)	-.189 (10)	-.137 (11)	-.192 (11)
7	75-90	1.36 (10)	1.30 (10)	1.11 (11)	.91 (8)	.92 (5)	1.04 (6)	1.09 (11)	1.12 (11)
		31.9 (10)	32.4 (10)	31.0 (11)	24.1 (8)	27.1 (5)	29.0 (6)	25.6 (11)	26.9 (11)
		-.409 (10)	-.388 (10)	-.370 (11)	-.432 (8)	-.349 (5)	-.209 (6)	-.127 (11)	-.064 (11)



(c) Solar-zenith-angle bin 3, 36.87° to 45.57°.

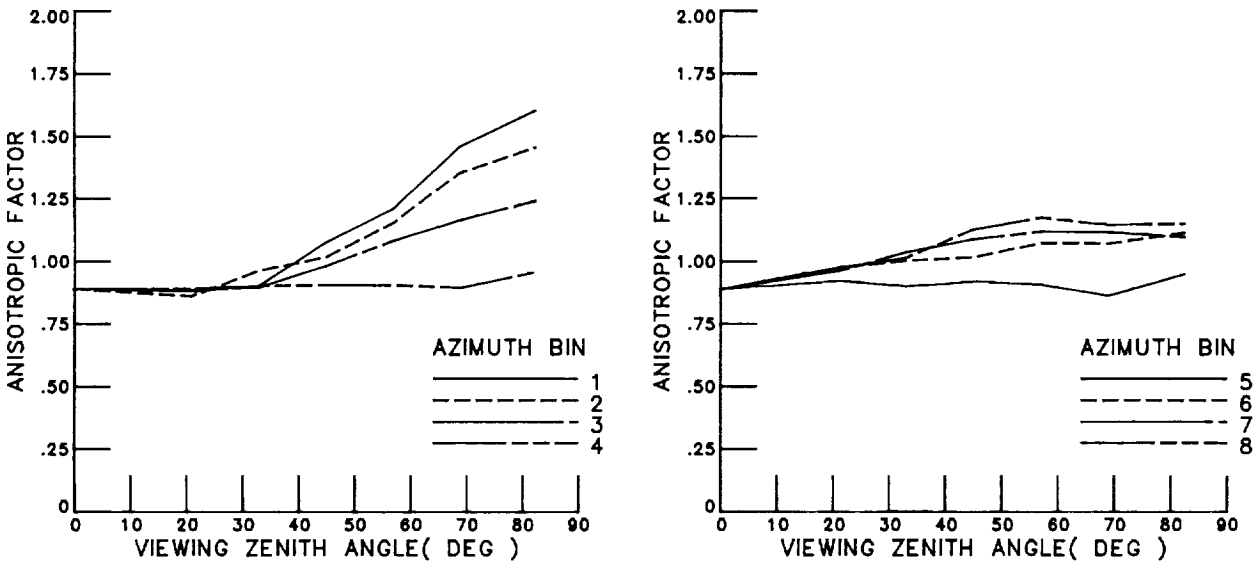
Figure 16. Continued.

SCENE TYPE : MOSTLY CLOUDY OVER LAND OR DESERT
DATA 1 - SW ANISOTROPIC FACTOR
2 - STANDARD DEVIATION OF SW RADIANCES(W/M**2/SR)
3 - CORRELATION OF LW AND SW RADIANCES
( ) - DATA SOURCE

SUN ZENITH : 45.6 - 53.1
MEAN ALBEDO : .3820 (18)
NORMALIZED ALBEDO : 1.2733 (18)

RELATIVE AZIMUTH

BIN NO. / ANGLE(DEG.)		1 0-9	2 9-30	3 30-60	4 60-90	5 90-120	6 120-150	7 150-171	8 171-180
VIEWING ZENITH BIN NO.	ANGLE(DEG.)								
1	0-15	.89 (11)	.89 (11)	.89 (11)	.89 (11)	.89 (11)	.89 (11)	.89 (11)	.89 (11)
		34.0 (11)	34.0 (11)	34.0 (11)	34.0 (11)	34.0 (11)	34.0 (11)	34.0 (11)	34.0 (11)
		-.386 (11)	-.386 (11)	-.386 (11)	-.386 (11)	-.386 (11)	-.386 (11)	-.386 (11)	-.386 (11)
2	15-27	.88 (10)	.86 (10)	.89 (11)	.89 (11)	.92 (11)	.98 (11)	.96 (11)	.98 (10)
		32.7 (10)	34.2 (10)	34.0 (11)	33.7 (11)	32.7 (11)	34.6 (11)	33.6 (11)	34.5 (10)
		-.388 (10)	-.388 (10)	-.345 (11)	-.344 (11)	-.311 (11)	-.275 (11)	-.247 (11)	-.325 (10)
3	27-39	.91 (10)	.96 (10)	.96 (10)	.90 (10)	.90 (10)	1.00 (10)	1.04 (10)	1.01 (10)
		31.5 (10)	35.7 (10)	34.1 (10)	33.0 (10)	31.0 (10)	34.4 (10)	32.2 (10)	30.1 (10)
		-.443 (10)	-.362 (10)	-.326 (10)	-.432 (10)	-.417 (10)	-.166 (10)	-.157 (10)	-.245 (10)
4	39-51	1.06 (10)	1.02 (11)	.96 (11)	.90 (11)	.92 (11)	1.02 (11)	1.09 (11)	1.13 (10)
		34.9 (10)	35.8 (11)	35.3 (11)	31.3 (11)	33.9 (11)	33.6 (11)	32.3 (11)	31.5 (10)
		-.359 (10)	-.402 (11)	-.402 (11)	-.344 (11)	-.423 (11)	-.344 (11)	-.177 (11)	-.274 (10)
5	51-63	1.21 (10)	1.15 (10)	1.08 (10)	.90 (10)	.91 (11)	1.07 (10)	1.12 (11)	1.17 (10)
		36.1 (10)	33.0 (10)	34.2 (10)	30.1 (10)	30.7 (11)	33.2 (10)	28.8 (11)	30.7 (10)
		-.281 (10)	-.300 (10)	-.409 (10)	-.396 (10)	-.326 (11)	-.180 (10)	-.101 (11)	-.038 (10)
6	63-75	1.46 (10)	1.36 (11)	1.17 (11)	.90 (10)	.86 (11)	1.07 (10)	1.12 (11)	1.15 (11)
		39.7 (10)	36.6 (11)	33.8 (11)	26.7 (10)	28.5 (11)	29.8 (10)	27.4 (11)	26.2 (11)
		-.253 (10)	-.352 (11)	-.382 (11)	-.441 (10)	-.377 (11)	-.297 (10)	-.150 (11)	-.194 (11)
7	75-90	1.60 (10)	1.46 (10)	1.24 (10)	.96 (7)	.95 (5)	1.11 (9)	1.10 (11)	1.15 (10)
		35.4 (10)	36.6 (10)	34.4 (10)	25.7 (7)	27.3 (5)	26.6 (9)	25.4 (11)	24.3 (10)
		-.212 (10)	-.304 (10)	-.401 (10)	-.847 (7)	-.433 (5)	-.130 (9)	-.084 (11)	-.181 (10)



(d) Solar-zenith-angle bin 4, 45.57° to 53.13°.

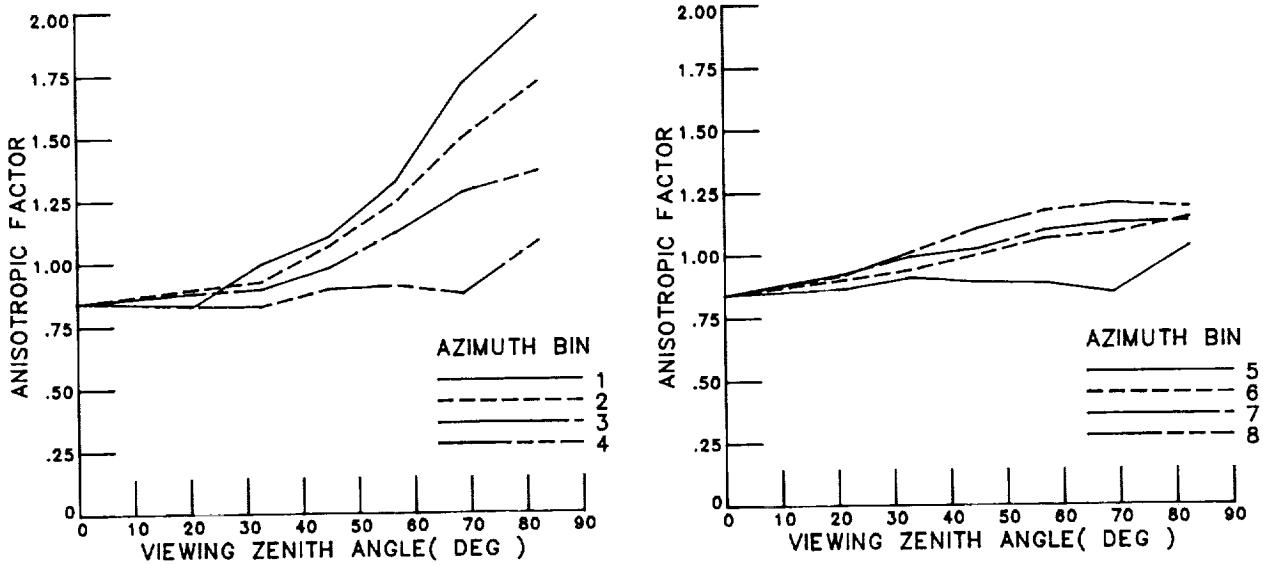
Figure 16. Continued.

SCENE TYPE : MOSTLY CLOUDY OVER LAND OR DESERT
DATA 1 - SW ANISOTROPIC FACTOR
2 - STANDARD DEVIATION OF SW RADIANCES(W/M**2/SR)
3 - CORRELATION OF LW AND SW RADIANCES
( ) - DATA SOURCE

SUN ZENITH : 53.1 - 60.0
MEAN ALBEDO : .4200 (18)
NORMALIZED ALBEDO : 1.4000 (18)

RELATIVE AZIMUTH

BIN NO. / ANGLE(DEG.)		1 0-9	2 9-30	3 30-60	4 60-90	5 90-120	6 120-150	7 150-171	8 171-180
VIEWING ZENITH BIN NO.	ANGLE(DEG.)								
1	0-15	.84 (11)	.84 (11)	.84 (11)	.84 (11)	.84 (11)	.84 (11)	.84 (11)	.84 (11)
		30.9 (11)	30.9 (11)	30.9 (11)	30.9 (11)	30.9 (11)	30.9 (11)	30.9 (11)	30.9 (11)
		-.391 (11)	-.391 (11)	-.391 (11)	-.391 (11)	-.391 (11)	-.391 (11)	-.391 (11)	-.391 (11)
2	15-27	.89 (10)	.90 (10)	.86 (11)	.83 (11)	.86 (11)	.90 (11)	.92 (10)	.92 (10)
		30.3 (10)	34.3 (10)	30.7 (11)	29.6 (11)	29.6 (11)	29.9 (11)	30.8 (10)	29.8 (10)
		-.352 (10)	-.478 (10)	-.475 (11)	-.397 (11)	-.336 (11)	-.305 (11)	-.368 (10)	-.263 (10)
3	27-39	1.00 (10)	.92 (10)	.90 (10)	.83 (10)	.91 (10)	.94 (10)	.99 (10)	1.01 (10)
		33.7 (10)	29.0 (10)	28.8 (10)	28.2 (10)	30.0 (10)	29.2 (10)	28.3 (10)	26.8 (10)
		-.459 (10)	-.363 (10)	-.360 (10)	-.309 (10)	-.295 (10)	-.159 (10)	-.292 (10)	-.216 (10)
4	39-51	1.10 (10)	1.07 (10)	.98 (10)	.89 (10)	.85 (11)	1.00 (10)	1.02 (10)	1.11 (10)
		33.6 (10)	31.9 (10)	31.4 (10)	30.1 (10)	29.2 (11)	30.0 (10)	28.0 (10)	29.4 (10)
		-.305 (10)	-.360 (10)	-.347 (10)	-.268 (10)	-.392 (11)	-.290 (10)	-.233 (10)	-.167 (10)
5	51-63	1.32 (10)	1.24 (10)	1.12 (10)	.91 (10)	.88 (11)	1.06 (10)	1.10 (10)	1.18 (10)
		33.5 (10)	35.7 (10)	32.6 (10)	25.3 (10)	26.5 (11)	28.3 (10)	27.9 (10)	28.1 (10)
		-.300 (10)	-.324 (10)	-.326 (10)	-.415 (10)	-.465 (11)	-.228 (10)	-.073 (10)	-.073 (10)
6	63-75	1.71 (10)	1.50 (11)	1.28 (11)	.87 (10)	.84 (10)	1.08 (10)	1.13 (11)	1.20 (10)
		40.7 (10)	38.6 (11)	33.6 (11)	25.6 (10)	27.4 (10)	25.2 (10)	24.3 (11)	24.0 (10)
		-.296 (10)	-.255 (11)	-.273 (11)	-.411 (10)	-.456 (10)	-.066 (10)	-.170 (11)	-.066 (10)
7	75-90	1.98 (9)	1.72 (10)	1.36 (10)	1.08 (5)	1.03 (5)	1.15 (9)	1.13 (11)	1.19 (10)
		41.9 (9)	35.0 (10)	33.2 (10)	28.1 (5)	27.6 (5)	25.6 (9)	22.8 (11)	20.8 (10)
		-.016 (9)	-.184 (10)	-.217 (10)	-.310 (5)	-.329 (5)	-.192 (9)	-.205 (11)	-.223 (10)



(e) Solar-zenith-angle bin 5, 53.13° to 60.00°.

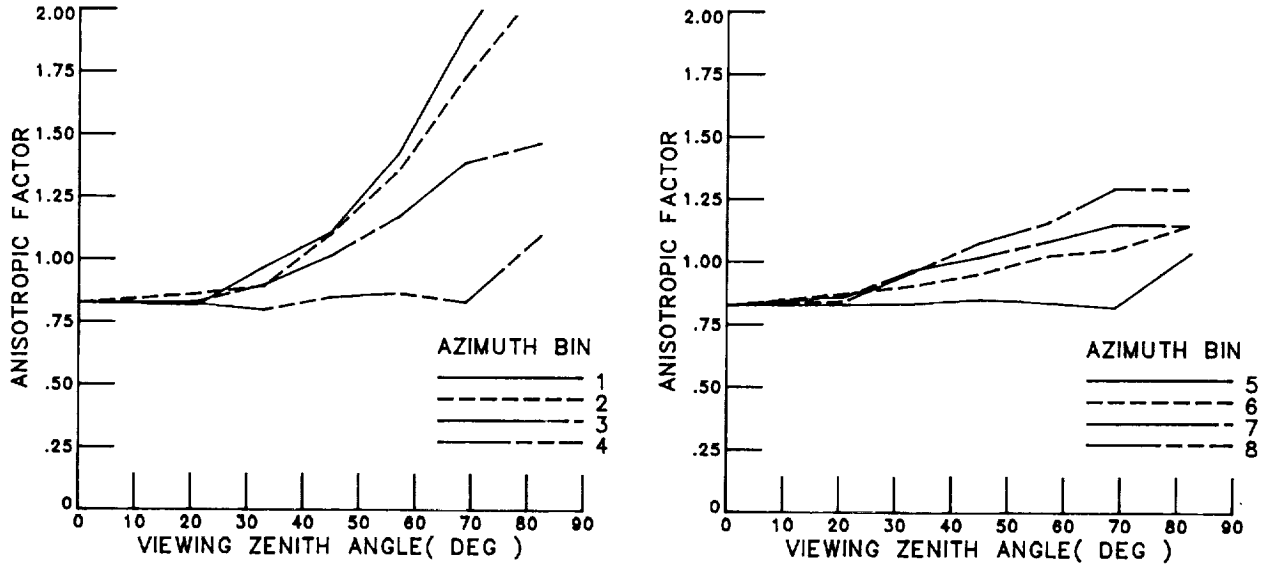
Figure 16. Continued.

SCENE TYPE : MOSTLY CLOUDY OVER LAND OR DESERT
DATA 1 - SW ANISOTROPIC FACTOR
2 - STANDARD DEVIATION OF SW RADIANCES(W/M**2/SR)
3 - CORRELATION OF LW AND SW RADIANCES
( ) - DATA SOURCE

SUN ZENITH : 60.0 - 66.4
MEAN ALBEDO : .4487 (18)
NORMALIZED ALBEDO : 1.4957 (18)

RELATIVE AZIMUTH

VIEWING ZENITH BIN NO.	VIEWING ZENITH ANGLE(DEG.)	BIN NO. 1 ANGLE(DEG.) 0-9	2 9-30	3 30-60	4 60-90	5 90-120	6 120-150	7 150-171	8 171-180
1	0-15	.83 (11)	.83 (11)	.83 (11)	.83 (11)	.83 (11)	.83 (11)	.83 (11)	.83 (11)
		25.0 (11)	25.0 (11)	25.0 (11)	25.0 (11)	25.0 (11)	25.0 (11)	25.0 (11)	25.0 (11)
		-.281 (11)	-.281 (11)	-.281 (11)	-.281 (11)	-.281 (11)	-.281 (11)	-.281 (11)	-.281 (11)
2	15-27	.82 (10)	.86 (10)	.83 (10)	.82 (10)	.83 (10)	.88 (10)	.86 (10)	.84 (10)
		23.7 (10)	27.1 (10)	25.1 (10)	24.8 (10)	23.6 (10)	25.0 (10)	23.9 (10)	23.9 (10)
		-.166 (10)	-.298 (10)	-.289 (10)	-.365 (10)	-.257 (10)	-.244 (10)	-.164 (10)	-.342 (10)
3	27-39	.97 (9)	.89 (10)	.90 (10)	.80 (10)	.83 (10)	.91 (10)	.97 (10)	.96 (9)
		26.5 (9)	25.8 (10)	24.2 (10)	21.5 (10)	22.6 (10)	21.8 (10)	22.9 (10)	23.3 (9)
		-.265 (9)	-.310 (10)	-.264 (10)	-.308 (10)	-.154 (10)	-.191 (10)	-.231 (10)	-.399 (9)
4	39-51	1.11 (10)	1.10 (10)	1.02 (10)	.85 (10)	.85 (10)	.96 (10)	1.02 (10)	1.08 (10)
		28.9 (10)	27.9 (10)	25.8 (10)	22.6 (10)	23.1 (10)	24.0 (10)	23.2 (10)	23.8 (10)
		-.152 (10)	-.340 (10)	-.259 (10)	-.449 (10)	-.316 (10)	-.253 (10)	-.182 (10)	-.263 (10)
5	51-63	1.42 (9)	1.36 (10)	1.17 (10)	.87 (10)	.84 (10)	1.03 (10)	1.08 (10)	1.16 (10)
		29.9 (9)	31.4 (10)	29.6 (10)	21.6 (10)	20.6 (10)	21.0 (10)	21.8 (10)	19.2 (10)
		-.171 (9)	-.175 (10)	-.425 (10)	-.480 (10)	-.438 (10)	-.199 (10)	-.047 (10)	.010 (10)
6	63-75	1.61 (10)	1.73 (10)	1.39 (10)	.83 (10)	.82 (10)	1.05 (10)	1.15 (11)	1.30 (10)
		43.6 (10)	39.5 (10)	32.1 (10)	22.1 (10)	19.7 (10)	20.9 (10)	19.1 (11)	20.4 (10)
		-.198 (10)	-.135 (10)	-.232 (10)	-.541 (10)	-.458 (10)	-.226 (10)	-.212 (11)	.086 (10)
7	75-90	2.35 (8)	2.10 (10)	1.47 (10)	1.10 (5)	1.04 (5)	1.15 (9)	1.15 (10)	1.29 (10)
		52.3 (8)	41.9 (10)	28.4 (10)	23.6 (5)	20.8 (5)	18.6 (9)	19.4 (10)	16.3 (10)
		-.095 (8)	-.205 (10)	-.347 (10)	-.408 (5)	-.330 (5)	-.130 (9)	-.320 (10)	.131 (10)



(f) Solar-zenith-angle bin 6, 60.00° to 66.42°.

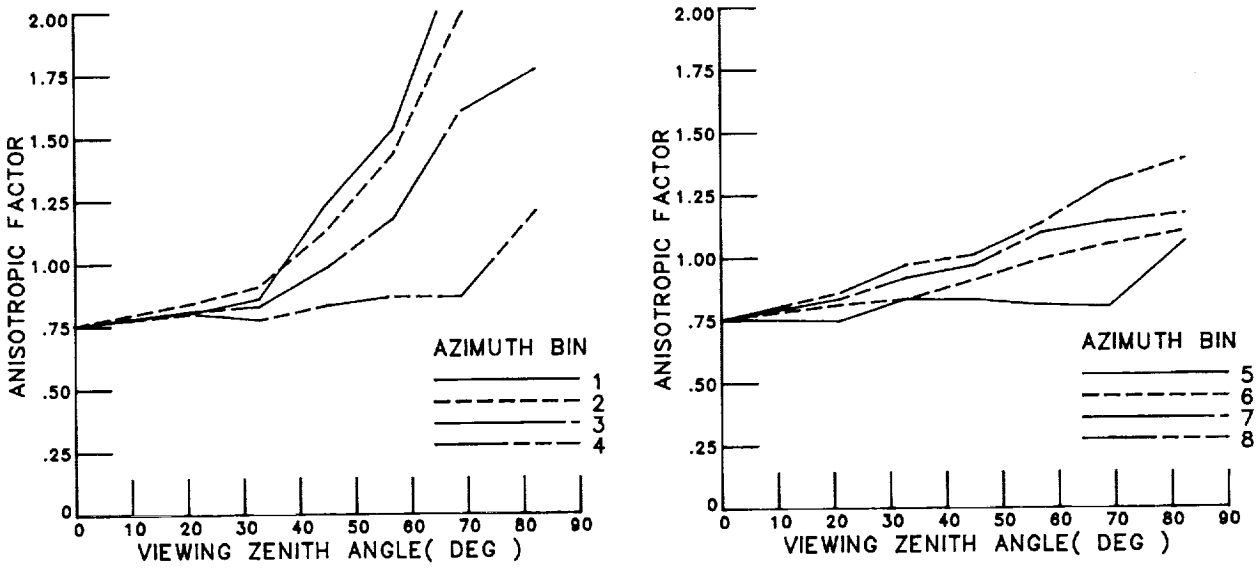
Figure 16. Continued.

SCENE TYPE : MOSTLY CLOUDY OVER LAND OR DESERT
DATA 1 - SW ANISOTROPIC FACTOR
2 - STANDARD DEVIATION OF SW RADIANCES(W/M**2/SR)
3 - CORRELATION OF LW AND SW RADIANCES
( ) - DATA SOURCE

SUN ZENITH : 66.4 - 72.5
MEAN ALBEDO : .4945 (18)
NORMALIZED ALBEDO : 1.6483 (18)

RELATIVE AZIMUTH

VIEWING ZENITH BIN NO.	ANGLE(DEG.)	BIN NO. / ANGLE(DEG.)	1 0-9	2 9-30	3 30-60	4 60-90	5 90-120	6 120-150	7 150-171	8 171-180
1	0-15		.75 (10)	.75 (10)	.75 (10)	.75 (10)	.75 (10)	.75 (10)	.75 (10)	.75 (10)
			17.9 (10)	17.9 (10)	17.9 (10)	17.9 (10)	17.9 (10)	17.9 (10)	17.9 (10)	17.9 (10)
			-.267 (10)	-.267 (10)	-.267 (10)	-.267 (10)	-.267 (10)	-.267 (10)	-.267 (10)	-.267 (10)
2	15-27		.80 (9)	.84 (9)	.81 (10)	.80 (10)	.75 (10)	.81 (10)	.83 (9)	.86 (9)
			17.4 (9)	19.1 (9)	18.2 (10)	17.2 (10)	17.1 (10)	16.5 (10)	16.8 (9)	16.8 (9)
			-.255 (9)	-.200 (9)	-.201 (10)	-.211 (10)	-.245 (10)	-.076 (10)	-.360 (9)	-.136 (9)
3	27-39		.86 (8)	.91 (9)	.83 (9)	.77 (9)	.83 (9)	.83 (9)	.92 (9)	.97 (8)
			16.6 (8)	19.6 (9)	20.0 (9)	17.2 (9)	18.5 (9)	16.5 (9)	17.0 (9)	13.8 (8)
			-.121 (8)	-.389 (9)	-.269 (9)	-.267 (9)	-.418 (9)	-.011 (9)	-.141 (9)	.163 (8)
4	39-51		1.23 (8)	1.13 (10)	.98 (9)	.83 (10)	.83 (10)	.91 (10)	.97 (10)	1.01 (9)
			20.7 (8)	23.4 (10)	21.4 (9)	17.2 (10)	17.4 (10)	17.9 (10)	16.1 (10)	16.3 (9)
			-.226 (8)	-.310 (10)	-.206 (9)	-.409 (10)	-.392 (10)	-.227 (10)	.054 (10)	-.129 (9)
5	51-63		1.53 (8)	1.43 (9)	1.18 (9)	.87 (10)	.81 (10)	.99 (9)	1.10 (10)	1.13 (8)
			31.3 (8)	26.1 (9)	25.1 (9)	17.5 (10)	17.4 (10)	16.0 (9)	15.1 (10)	12.7 (8)
			-.028 (8)	-.211 (9)	-.191 (9)	-.443 (10)	-.398 (10)	-.201 (9)	-.171 (10)	-.168 (8)
6	63-75		2.23 (9)	1.98 (10)	1.60 (10)	.86 (10)	.80 (10)	1.05 (10)	1.14 (10)	1.29 (10)
			41.4 (9)	39.6 (10)	28.7 (10)	16.0 (10)	14.3 (10)	13.2 (10)	16.1 (10)	17.3 (10)
			-.168 (9)	-.097 (10)	-.254 (10)	-.508 (10)	-.560 (10)	-.108 (10)	-.219 (10)	-.064 (10)
7	75-90		2.94 (8)	2.45 (9)	1.77 (9)	1.21 (5)	1.06 (5)	1.10 (9)	1.17 (10)	1.39 (9)
			48.1 (8)	51.8 (9)	34.3 (9)	21.8 (5)	17.6 (5)	14.3 (9)	14.1 (10)	13.1 (9)
			-.327 (8)	-.074 (9)	-.300 (9)	-.388 (5)	-.397 (5)	-.201 (9)	-.471 (10)	-.110 (9)



(g) Solar-zenith-angle bin 7, 66.42° to 72.54°.

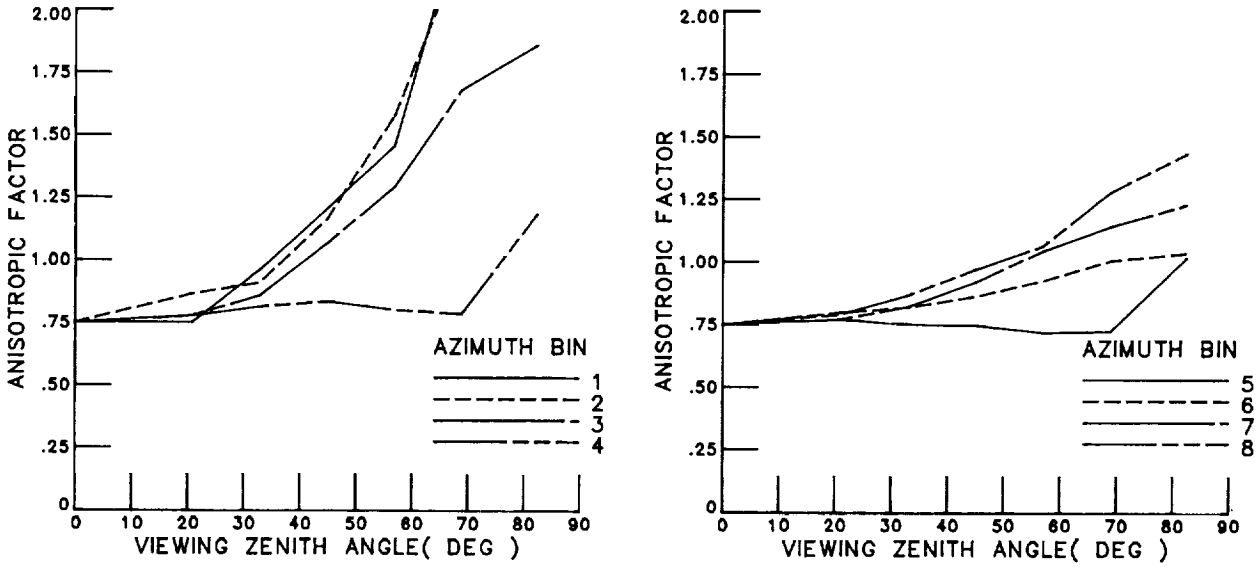
Figure 16. Continued.

SCENE TYPE : MOSTLY CLOUDY OVER LAND OR DESERT
DATA 1 - SW ANISOTROPIC FACTOR
2 - STANDARD DEVIATION OF SW RADIANCES(W/M**2/SR)
3 - CORRELATION OF LW AND SW RADIANCES
( ) - DATA SOURCE

SUN ZENITH : 72.5 - 76.5
MEAN ALBEDO : .5380 (18)
NORMALIZED ALBEDO : 1.7933 (18)

RELATIVE AZIMUTH

BIN NO. / ANGLE(DEG.)		1 0-9	2 9-30	3 30-60	4 60-90	5 90-120	6 120-150	7 150-171	8 171-180
VIEWING ZENITH BIN NO.	ANGLE(DEG.)								
1	0-15	.75 (10)	.75 (10)	.75 (10)	.75 (10)	.75 (10)	.75 (10)	.75 (10)	.75 (10)
		10.9 (10)	10.9 (10)	10.9 (10)	10.9 (10)	10.9 (10)	10.9 (10)	10.9 (10)	10.9 (10)
		-.070 (10)	-.070 (10)	-.070 (10)	-.070 (10)	-.070 (10)	-.070 (10)	-.070 (10)	-.070 (10)
2	15-27	.75 (8)	.86 (8)	.78 (9)	.78 (9)	.77 (9)	.80 (9)	.77 (8)	.79 (8)
		12.8 (8)	9.6 (8)	12.9 (9)	8.7 (9)	11.3 (9)	10.0 (9)	11.2 (8)	9.4 (8)
		.265 (8)	.052 (8)	-.240 (9)	.122 (9)	-.323 (9)	-.098 (9)	-.229 (8)	-.058 (8)
3	27-39	.96 (7)	.91 (8)	.86 (8)	.81 (8)	.75 (8)	.82 (8)	.82 (8)	.87 (7)
		14.7 (7)	10.1 (8)	10.6 (8)	11.4 (8)	10.6 (8)	10.0 (8)	11.5 (8)	6.6 (7)
		-.067 (7)	-.234 (8)	-.106 (8)	-.436 (8)	-.443 (8)	-.158 (8)	-.263 (8)	-.005 (7)
4	39-51	1.20 (8)	1.16 (9)	1.07 (8)	.83 (10)	.75 (9)	.86 (9)	.92 (9)	.97 (8)
		15.1 (8)	12.4 (9)	12.2 (8)	12.9 (10)	11.2 (9)	11.1 (9)	9.2 (9)	6.5 (8)
		-.006 (8)	-.221 (9)	-.325 (8)	-.598 (10)	-.506 (9)	-.168 (9)	-.261 (9)	-.176 (8)
5	51-63	1.46 (7)	1.58 (8)	1.29 (8)	.80 (10)	.72 (10)	.93 (9)	1.04 (8)	1.07 (7)
		22.5 (7)	20.6 (8)	15.0 (8)	12.6 (10)	10.2 (10)	11.0 (9)	9.2 (8)	9.8 (7)
		.290 (7)	-.080 (8)	.041 (8)	-.587 (10)	-.591 (10)	-.013 (9)	-.192 (8)	-.220 (7)
6	63-75	2.40 (8)	2.26 (9)	1.68 (8)	.79 (10)	.72 (10)	1.01 (10)	1.14 (10)	1.28 (8)
		39.5 (8)	34.4 (9)	23.4 (8)	16.8 (10)	10.8 (10)	11.6 (10)	10.9 (10)	13.2 (8)
		-.073 (8)	.113 (9)	-.366 (8)	-.379 (10)	-.497 (10)	-.223 (10)	-.187 (10)	-.323 (8)
7	75-90	3.83 (7)	3.11 (9)	1.86 (8)	1.19 (5)	1.02 (5)	1.04 (8)	1.23 (10)	1.44 (7)
		61.8 (7)	37.3 (9)	23.0 (8)	17.9 (5)	12.8 (5)	10.7 (8)	11.1 (10)	9.3 (7)
		-.247 (7)	-.014 (9)	-.346 (8)	-.385 (5)	-.465 (5)	-.476 (8)	-.193 (10)	.292 (7)



(h) Solar-zenith-angle bin 8, 72.54° to 78.46°.

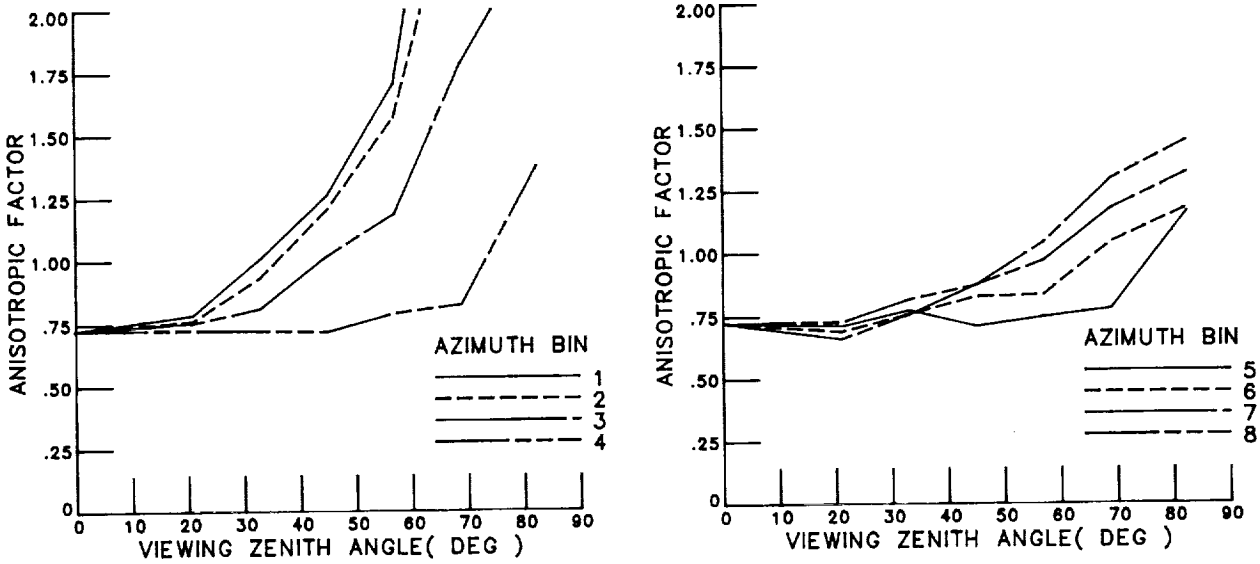
Figure 16. Continued.

SCENE TYPE : MOSTLY CLOUDY OVER LAND OR DESERT
DATA 1 - SW ANISOTROPIC FACTOR
2 - STANDARD DEVIATION OF SW RADIANCES(W/M**2/SR)
3 - CORRELATION OF LW AND SW RADIANCES
( ) - DATA SOURCE

SUN ZENITH : 78.5 - 84.3
MEAN ALBEDO : .5805 (18)
NORMALIZED ALBEDO : 1.9350 (18)

RELATIVE AZIMUTH

BIN NO.	1	2	3	4	5	6	7	8
ANGLE(DEG.)	0-9	9-30	30-60	60-90	90-120	120-150	150-171	171-180
VIEWING ZENITH								
BIN NO. ANGLE(DEG.)								
1 0-15	.72 (10)	.72 (10)	.72 (10)	.72 (10)	.72 (10)	.72 (10)	.72 (10)	.72 (10)
	5.9 (10)	5.9 (10)	5.9 (10)	5.9 (10)	5.9 (10)	5.9 (10)	5.9 (10)	5.9 (10)
	-.623 (10)	-.623 (10)	-.623 (10)	-.623 (10)	-.623 (10)	-.623 (10)	-.623 (10)	-.623 (10)
2 15-27	.78 (7)	.76 (8)	.75 (8)	.72 (8)	.71 (8)	.69 (9)	.66 (7)	.73 (7)
	7.0 (7)	8.0 (8)	7.2 (8)	5.9 (8)	7.0 (8)	6.7 (9)	7.1 (7)	5.3 (7)
	-.647 (7)	-.853 (8)	-.781 (8)	-.385 (8)	-.747 (8)	-.572 (9)	-.492 (7)	-.700 (7)
3 27-39	1.01 (7)	.93 (7)	.81 (7)	.72 (8)	.77 (8)	.76 (7)	.76 (7)	.82 (7)
	6.8 (7)	7.4 (7)	5.1 (7)	6.4 (8)	6.2 (8)	5.2 (7)	4.2 (7)	4.7 (7)
	-.473 (7)	-.895 (7)	-.572 (7)	-.572 (8)	-.671 (8)	-.670 (7)	-.708 (7)	-.886 (7)
4 39-51	1.26 (8)	1.20 (8)	1.02 (8)	.72 (9)	.71 (9)	.83 (8)	.87 (8)	.87 (7)
	8.0 (8)	7.5 (8)	7.4 (8)	6.4 (9)	6.5 (9)	6.5 (8)	5.9 (8)	6.5 (7)
	-.365 (8)	-.582 (8)	-.778 (8)	-.608 (9)	-.570 (9)	-.507 (8)	-.354 (8)	-.697 (7)
5 51-63	1.70 (7)	1.57 (8)	1.16 (8)	.79 (10)	.75 (9)	.84 (8)	.97 (8)	1.04 (7)
	10.4 (7)	12.9 (8)	8.9 (8)	6.4 (10)	5.0 (9)	6.5 (8)	4.3 (8)	4.4 (7)
	-.707 (7)	-.381 (8)	-.579 (8)	-.627 (10)	-.569 (9)	-.442 (8)	-.625 (8)	-.315 (7)
6 63-75	3.26 (8)	2.58 (9)	1.79 (9)	.82 (10)	.78 (10)	1.04 (10)	1.18 (10)	1.30 (7)
	39.4 (8)	29.3 (9)	17.3 (9)	6.3 (10)	5.9 (10)	6.4 (10)	6.3 (10)	5.7 (7)
	-.344 (8)	-.139 (9)	-.428 (9)	-.591 (10)	-.406 (10)	-.375 (10)	-.426 (10)	-.188 (7)
7 75-90	3.46 (6)	3.70 (7)	2.29 (9)	1.37 (5)	1.17 (5)	1.18 (9)	1.32 (10)	1.45 (7)
	38.7 (6)	38.1 (7)	16.4 (9)	9.7 (5)	7.9 (5)	6.5 (9)	6.8 (10)	5.8 (7)
	-.244 (6)	-.143 (7)	-.235 (9)	-.467 (5)	-.430 (5)	-.562 (9)	-.415 (10)	-.389 (7)



(i) Solar-zenith-angle bin 9, 78.46° to 84.26°.

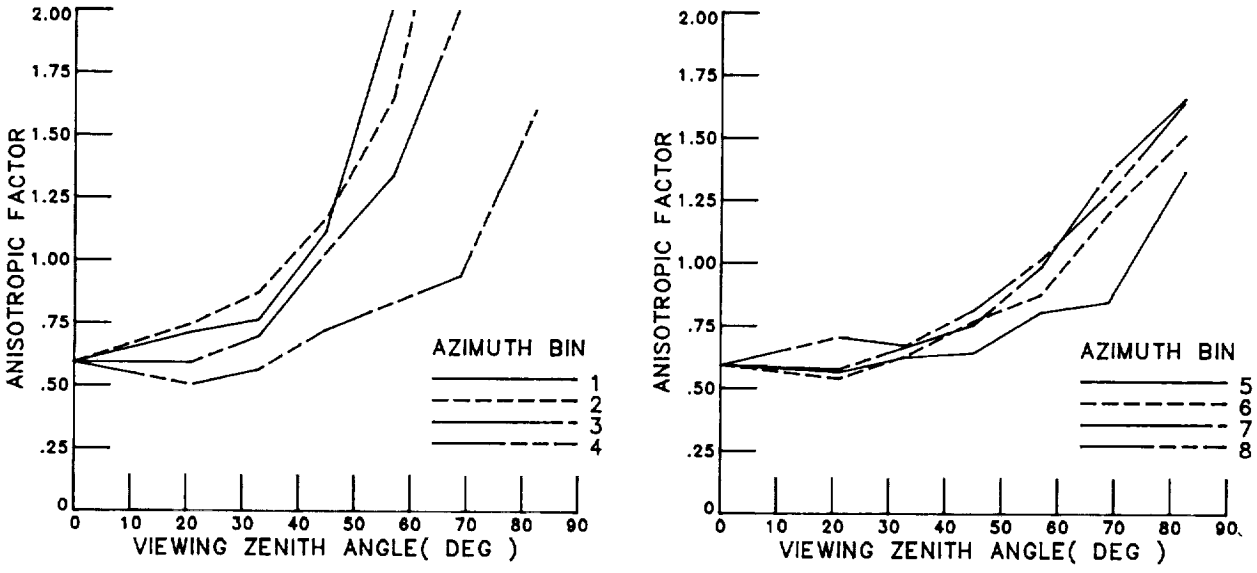
Figure 16. Continued.

SCENE TYPE : MOSTLY CLOUDY OVER LAND OR DESERT
DATA 1 - SW ANISOTROPIC FACTOR
2 - STANDARD DEVIATION OF SW RADIANCES(W/M**2/SR)
3 - CORRELATION OF LW AND SW RADIANCES
( ) - DATA SOURCE

SUN ZENITH : 84.3 - 90.0
MEAN ALBEDO : .6320 (18)
NORMALIZED ALBEDO : 2.1067 (18)

RELATIVE AZIMUTH

VIEWING ZENITH BIN NO.	ANGLE(DEG.)	1 0-9	2 9-30	3 30-60	4 60-90	5 90-120	6 120-150	7 150-171	8 171-180
1	0-15	.59 (9)	.59 (9)	.59 (9)	.59 (9)	.59 (9)	.59 (9)	.59 (9)	.59 (9)
		2.3 (9)	2.3 (9)	2.3 (9)	2.3 (9)	2.3 (9)	2.3 (9)	2.3 (9)	2.3 (9)
		-.698 (9)	-.698 (9)	-.698 (9)	-.698 (9)	-.698 (9)	-.698 (9)	-.698 (9)	-.698 (9)
2	15-27	.71 (6)	.75 (8)	.59 (8)	.50 (8)	.56 (8)	.54 (8)	.58 (7)	.71 (7)
		2.2 (6)	2.1 (8)	2.2 (8)	1.8 (8)	2.1 (8)	2.1 (8)	2.9 (7)	2.5 (7)
		-.698 (6)	-.843 (8)	-.453 (8)	-.509 (8)	-.554 (8)	-.575 (8)	-.764 (7)	-.771 (7)
3	27-39	.76 (7)	.87 (7)	.76 (7)	.56 (7)	.62 (7)	.63 (7)	.67 (7)	.67 (7)
		2.1 (7)	1.8 (7)	1.3 (7)	2.3 (7)	1.8 (7)	2.0 (7)	2.2 (7)	2.3 (7)
		-.408 (7)	-.718 (7)	-.569 (7)	-.720 (7)	-.357 (7)	-.739 (7)	-.821 (7)	-.603 (7)
4	39-51	1.11 (7)	1.17 (8)	1.03 (8)	.72 (8)	.64 (8)	.77 (8)	.76 (8)	.81 (7)
		4.0 (7)	3.7 (8)	2.9 (8)	2.6 (8)	1.7 (8)	2.7 (8)	2.6 (8)	2.7 (7)
		-.596 (7)	-.531 (8)	-.647 (8)	-.616 (8)	-.469 (8)	-.449 (8)	-.703 (8)	-.777 (7)
5	51-63	2.03 (6)	1.65 (7)	1.34 (7)	.83 (8)	.81 (8)	.88 (8)	.99 (7)	1.02 (6)
		6.3 (6)	4.8 (7)	3.8 (7)	2.2 (8)	2.0 (8)	1.7 (8)	2.8 (7)	2.7 (6)
		-.553 (6)	-.665 (7)	-.667 (7)	-.708 (8)	-.772 (8)	-.568 (8)	-.726 (7)	-.702 (6)
6	63-75	3.71 (7)	2.86 (8)	2.02 (9)	.94 (8)	.85 (7)	1.20 (8)	1.37 (9)	1.28 (7)
		11.6 (7)	7.6 (8)	6.5 (9)	1.8 (8)	1.5 (7)	2.3 (8)	2.8 (9)	2.5 (7)
		-.288 (7)	-.384 (8)	-.446 (9)	-.538 (8)	-.472 (7)	-.336 (8)	-.419 (9)	-.577 (7)
7	75-90	3.96 (6)	4.25 (8)	2.65 (8)	1.60 (5)	1.37 (5)	1.51 (7)	1.66 (8)	1.65 (7)
		12.7 (6)	13.9 (8)	7.0 (8)	3.9 (5)	3.2 (5)	3.7 (7)	3.1 (8)	2.4 (7)
		-.180 (6)	-.072 (8)	-.152 (8)	-.394 (5)	-.411 (5)	-.448 (7)	-.539 (8)	-.787 (7)



(j) Solar-zenith-angle bin 10, 84.26° to 90.00°.

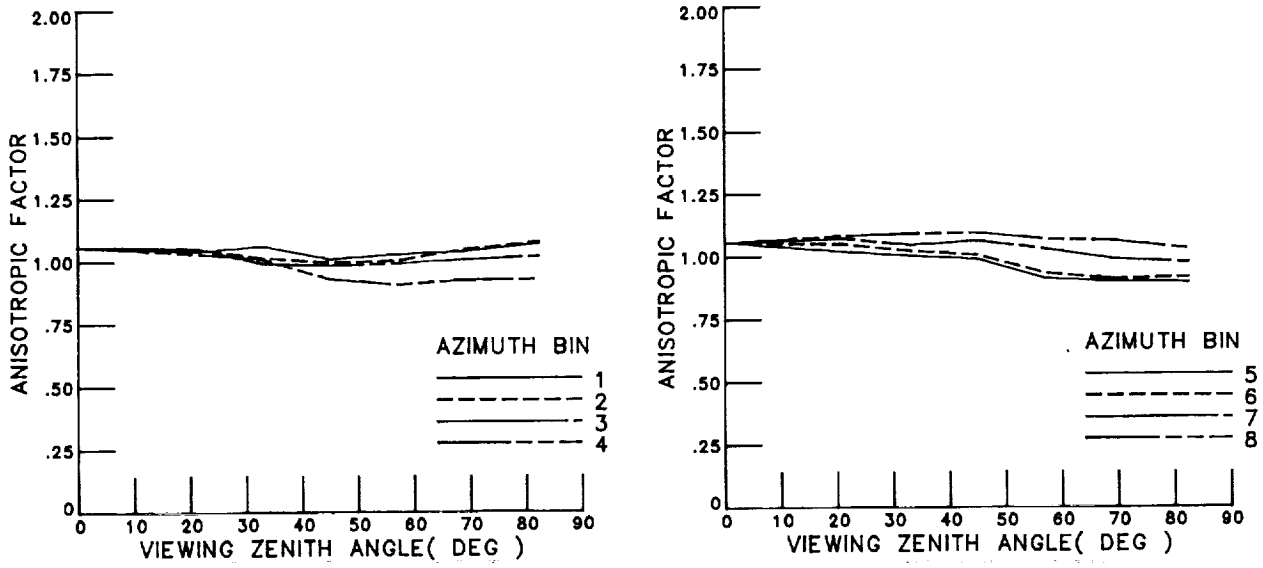
Figure 16. Concluded.

SCENE TYPE : MOSTLY CLOUDY OVER LAND-OCEAN MIX
DATA 1 - SW ANISOTROPIC FACTOR
2 - STANDARD DEVIATION OF SW RADIANCES(W/M**2/SR)
3 - CORRELATION OF LW AND SW RADIANCES
( ) - DATA SOURCE

SUN ZENITH : .C - 25.8
MEAN ALBEDO : .2775 (19)
NORMALIZED ALBEDO : 1.0000 (19)

RELATIVE AZIMUTH

BIN NO. / ANGLE(DEG.)		1 0-9	2 9-30	3 30-60	4 60-90	5 90-120	6 120-150	7 150-171	8 171-180
VIEWING ZENITH BIN NO.	ANGLE(DEG.)								
1	0-15	1.06 (2)	1.06 (2)	1.06 (2)	1.06 (2)	1.06 (2)	1.06 (2)	1.06 (2)	1.06 (2)
		42.5 (2)	42.5 (2)	42.5 (2)	42.5 (2)	42.5 (2)	42.5 (2)	42.5 (2)	42.5 (2)
		-.351 (2)	-.351 (2)	-.351 (2)	-.351 (2)	-.351 (2)	-.351 (2)	-.351 (2)	-.351 (2)
2	15-27	1.04 (2)	1.05 (2)	1.05 (2)	1.03 (2)	1.02 (2)	1.05 (2)	1.07 (2)	1.08 (2)
		39.3 (2)	41.1 (2)	44.1 (2)	43.6 (2)	43.4 (2)	44.6 (2)	44.8 (2)	45.9 (2)
		-.362 (2)	-.361 (2)	-.390 (2)	-.380 (2)	-.35C (2)	-.364 (2)	-.342 (2)	-.328 (2)
3	27-39	1.06 (2)	1.01 (2)	.99 (2)	1.01 (2)	1.0C (2)	1.02 (2)	1.05 (2)	1.09 (2)
		42.6 (2)	40.1 (2)	40.7 (2)	42.4 (2)	41.9 (2)	42.6 (2)	42.6 (2)	44.9 (2)
		-.414 (2)	-.390 (2)	-.348 (2)	-.323 (2)	-.29C (2)	-.318 (2)	-.262 (2)	-.307 (2)
4	39-51	1.01 (2)	.99 (2)	.98 (2)	.93 (2)	.95 (2)	1.01 (2)	1.06 (2)	1.10 (2)
		39.9 (2)	40.8 (2)	40.2 (2)	39.2 (2)	42.2 (2)	41.8 (2)	42.7 (2)	43.5 (2)
		-.374 (2)	-.394 (2)	-.364 (2)	-.325 (2)	-.323 (2)	-.297 (2)	-.282 (2)	-.318 (2)
5	51-63	1.03 (2)	1.00 (2)	.99 (2)	.91 (2)	.91 (2)	.93 (2)	1.03 (2)	1.07 (2)
		37.9 (2)	37.5 (2)	37.1 (2)	35.3 (2)	37.2 (2)	36.7 (2)	39.2 (2)	39.7 (2)
		-.364 (2)	-.378 (2)	-.377 (2)	-.299 (2)	-.35C (2)	-.282 (2)	-.259 (2)	-.265 (2)
6	63-75	1.04 (2)	1.05 (2)	1.00 (2)	.92 (2)	.9C (2)	.91 (2)	.99 (2)	1.06 (2)
		33.9 (2)	34.7 (2)	33.5 (2)	31.1 (2)	33.2 (2)	32.9 (2)	33.4 (2)	35.7 (2)
		-.340 (2)	-.385 (2)	-.384 (2)	-.366 (2)	-.392 (2)	-.328 (2)	-.311 (2)	-.313 (2)
7	75-90	1.07 (2)	1.07 (2)	1.02 (2)	.93 (2)	.9C (2)	.92 (2)	.97 (2)	1.03 (2)
		31.4 (2)	32.1 (2)	30.4 (2)	27.4 (2)	27.8 (2)	27.5 (2)	28.4 (2)	29.4 (2)
		-.396 (2)	-.417 (2)	-.424 (2)	-.385 (2)	-.401 (2)	-.340 (2)	-.376 (2)	-.335 (2)



(a) Solar-zenith-angle bin 1, 0° to 25.84°.

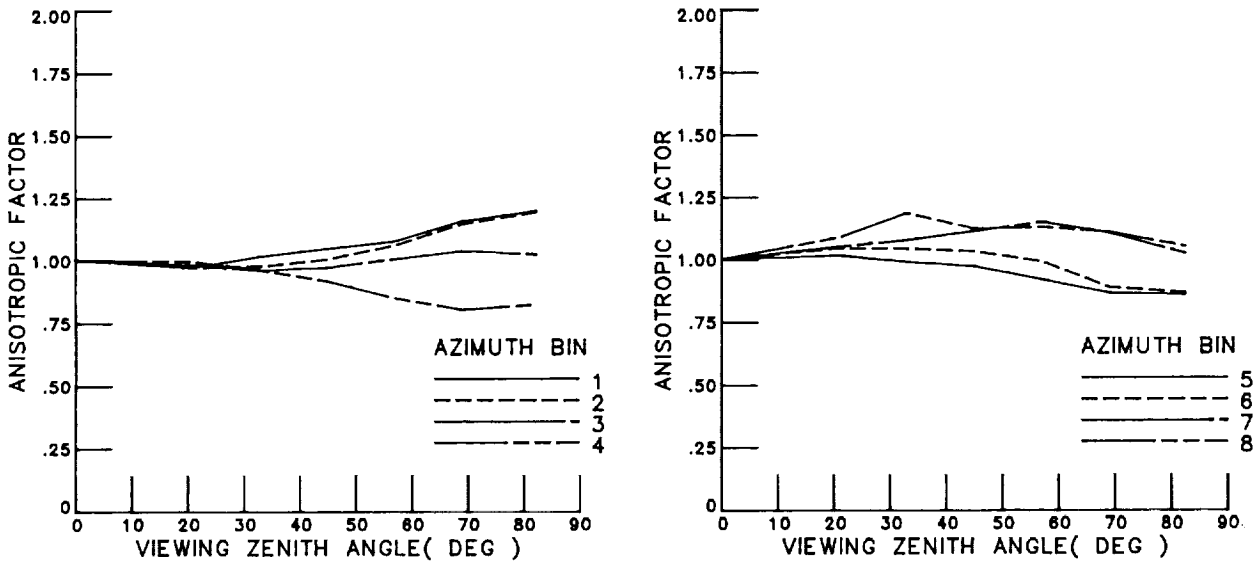
Figure 17. Bidirectional model for mostly cloudy over land-ocean mix. (See table 5 for explanation of data sources.)

SCENE TYPE : MOSTLY CLOUDY OVER LAND-OCEAN MIX
DATA 1 - SW ANISOTROPIC FACTOR
2 - STANDARD DEVIATION OF SW RADIANCES(W/M**2/SR)
3 - CORRELATION OF LW AND SW RADIANCES
( ) - DATA SOURCE

SUN ZENITH : 25.8 - 36.9
MEAN ALBEDO : .3010 (19)
NORMALIZED ALBEDO : 1.0847 (19)

RELATIVE AZIMUTH

BIN NO. / ANGLE(DEG.)	1 0-9	2 9-30	3 30-60	4 60-90	5 90-120	6 120-150	7 150-171	8 171-180
VIEWING ZENITH BIN NO. / ANGLE(DEG.)								
1 0-15	1.00 (2)	1.00 (2)	1.00 (2)	1.00 (2)	1.00 (2)	1.00 (2)	1.00 (2)	1.00 (2)
	45.6 (2)	45.6 (2)	45.6 (2)	45.6 (2)	45.6 (2)	45.6 (2)	45.6 (2)	45.6 (2)
	-.405 (2)	-.405 (2)	-.405 (2)	-.405 (2)	-.405 (2)	-.405 (2)	-.405 (2)	-.405 (2)
2 15-27	.97 (2)	.97 (2)	.98 (2)	1.00 (2)	1.02 (2)	1.05 (2)	1.05 (2)	1.09 (2)
	42.6 (2)	42.7 (2)	43.7 (2)	44.9 (2)	46.2 (2)	45.5 (2)	45.2 (2)	47.1 (2)
	-.403 (2)	-.445 (2)	-.398 (2)	-.396 (2)	-.384 (2)	-.366 (2)	-.366 (2)	-.380 (2)
3 27-39	1.02 (2)	.98 (2)	.96 (2)	.96 (2)	.99 (2)	1.04 (2)	1.08 (2)	1.19 (2)
	38.0 (2)	39.8 (2)	41.3 (2)	42.7 (2)	42.8 (2)	43.6 (2)	44.1 (2)	45.9 (2)
	-.477 (2)	-.469 (2)	-.385 (2)	-.392 (2)	-.411 (2)	-.358 (2)	-.329 (2)	-.355 (2)
4 39-51	1.05 (2)	1.01 (2)	.97 (2)	.92 (2)	.97 (2)	1.03 (2)	1.12 (2)	1.13 (2)
	39.9 (2)	40.9 (2)	41.0 (2)	41.5 (2)	41.8 (2)	44.8 (2)	44.1 (2)	43.7 (2)
	-.440 (2)	-.448 (2)	-.428 (2)	-.452 (2)	-.366 (2)	-.343 (2)	-.340 (2)	-.300 (2)
5 51-63	1.08 (2)	1.06 (2)	1.01 (2)	.85 (2)	.92 (2)	.99 (2)	1.15 (2)	1.13 (2)
	38.2 (2)	38.9 (2)	38.5 (2)	37.3 (2)	38.7 (2)	41.3 (2)	40.0 (2)	38.8 (2)
	-.435 (2)	-.436 (2)	-.415 (2)	-.406 (2)	-.406 (2)	-.330 (2)	-.290 (2)	-.281 (2)
6 63-75	1.16 (2)	1.15 (2)	1.04 (2)	.81 (2)	.87 (2)	.89 (2)	1.11 (2)	1.11 (2)
	38.2 (2)	37.5 (2)	36.5 (2)	32.3 (2)	36.8 (2)	37.0 (2)	35.9 (2)	35.8 (2)
	-.392 (2)	-.421 (2)	-.433 (2)	-.337 (2)	-.449 (2)	-.338 (2)	-.223 (2)	-.224 (2)
7 75-90	1.20 (2)	1.20 (2)	1.03 (2)	.83 (2)	.86 (2)	.87 (2)	1.03 (2)	1.06 (2)
	34.7 (2)	33.9 (2)	32.6 (2)	29.0 (2)	32.8 (2)	30.4 (2)	30.9 (2)	30.7 (2)
	-.328 (2)	-.424 (2)	-.411 (2)	-.351 (2)	-.390 (2)	-.318 (2)	-.292 (2)	-.267 (2)



(b) Solar-zenith-angle bin 2, 25.84° to 36.87°.

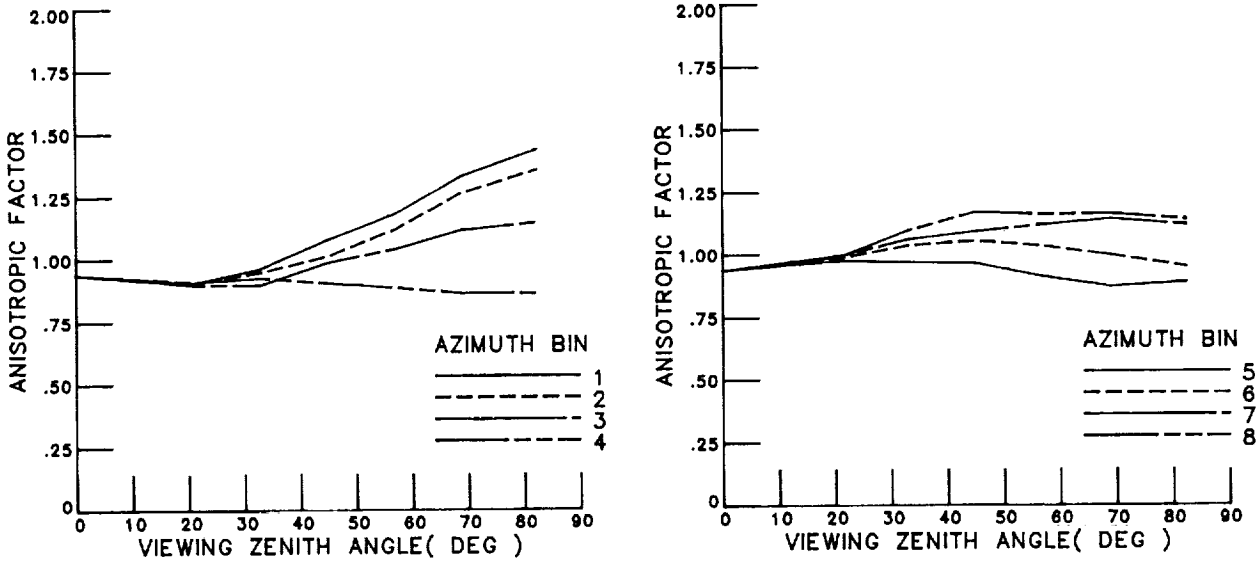
Figure 17. Continued.

SCENE TYPE : MOSTLY CLOUDY OVER LAND-OCEAN MIX
DATA 1 - SW ANISOTROPIC FACTOR
2 - STANDARD DEVIATION OF SW RADIANCES(W/M**2/SR)
3 - CORRELATION OF LW AND SW RADIANCES
( ) - DATA SOURCE

SUN ZENITH : 36.9 - 45.6
MEAN ALBEDO : .3225 (19)
NORMALIZED ALBEDO : 1.1622 (19)

RELATIVE AZIMUTH

BIN NO. / ANGLE(DEG.)		1 0-9	2 9-30	3 30-60	4 60-90	5 90-120	6 120-150	7 150-171	8 171-180
VIEWING ZENITH BIN NO.	ANGLE(DEG.)								
1	0-15	.94 (2) 41.6 (2) -.420 (2)	.94 (2) 41.6 (2) -.420 (2)	.94 (2) 41.6 (2) -.420 (2)	.94 (2) 41.6 (2) -.420 (2)	.94 (2) 41.6 (2) -.420 (2)	.94 (2) 41.6 (2) -.420 (2)	.94 (2) 41.6 (2) -.420 (2)	.94 (2) 41.6 (2) -.420 (2)
2	15-27	.91 (2) 38.3 (2) -.447 (2)	.91 (2) 38.1 (2) -.465 (2)	.96 (2) 38.6 (2) -.427 (2)	.91 (2) 40.0 (2) -.403 (2)	.97 (2) 42.5 (2) -.382 (2)	.99 (2) 41.2 (2) -.386 (2)	1.00 (2) 41.6 (2) -.398 (2)	.99 (2) 41.3 (2) -.372 (2)
3	27-39	.96 (2) 34.3 (2) -.492 (2)	.95 (2) 37.9 (2) -.443 (2)	.90 (2) 37.5 (2) -.466 (2)	.93 (2) 39.4 (2) -.387 (2)	.97 (2) 40.4 (2) -.413 (2)	1.04 (2) 40.8 (2) -.385 (2)	1.06 (2) 41.7 (2) -.338 (2)	1.10 (2) 41.5 (2) -.350 (2)
4	39-51	1.06 (2) 36.6 (2) -.457 (2)	1.01 (2) 36.8 (2) -.448 (2)	.99 (2) 39.4 (2) -.467 (2)	.90 (2) 38.1 (2) -.431 (2)	.96 (2) 38.2 (2) -.432 (2)	1.05 (2) 41.2 (2) -.363 (2)	1.09 (2) 40.0 (2) -.322 (2)	1.17 (2) 41.3 (2) -.326 (2)
5	51-63	1.18 (2) 35.3 (2) -.409 (2)	1.12 (2) 37.1 (2) -.415 (2)	1.04 (2) 37.2 (2) -.422 (2)	.89 (2) 34.9 (2) -.404 (2)	.91 (2) 35.5 (2) -.410 (2)	1.03 (2) 38.7 (2) -.342 (2)	1.12 (2) 35.9 (2) -.261 (2)	1.16 (2) 38.2 (2) -.281 (2)
6	63-75	1.33 (2) 37.2 (2) -.353 (2)	1.26 (2) 37.6 (2) -.441 (2)	1.12 (2) 35.9 (2) -.442 (2)	.86 (2) 37.0 (2) -.466 (2)	.87 (2) 34.5 (2) -.435 (2)	1.00 (2) 37.6 (2) -.303 (2)	1.14 (2) 33.8 (2) -.258 (2)	1.16 (2) 34.5 (2) -.284 (2)
7	75-90	1.43 (2) 35.3 (2) -.396 (2)	1.35 (2) 35.6 (2) -.421 (2)	1.15 (2) 34.8 (2) -.425 (2)	.86 (2) 30.3 (2) -.396 (2)	.85 (2) 32.2 (2) -.371 (2)	.95 (2) 33.1 (2) -.221 (2)	1.12 (2) 29.9 (2) -.223 (2)	1.14 (2) 29.9 (2) -.199 (2)



(c) Solar-zenith-angle bin 3, 36.87° to 45.57°.

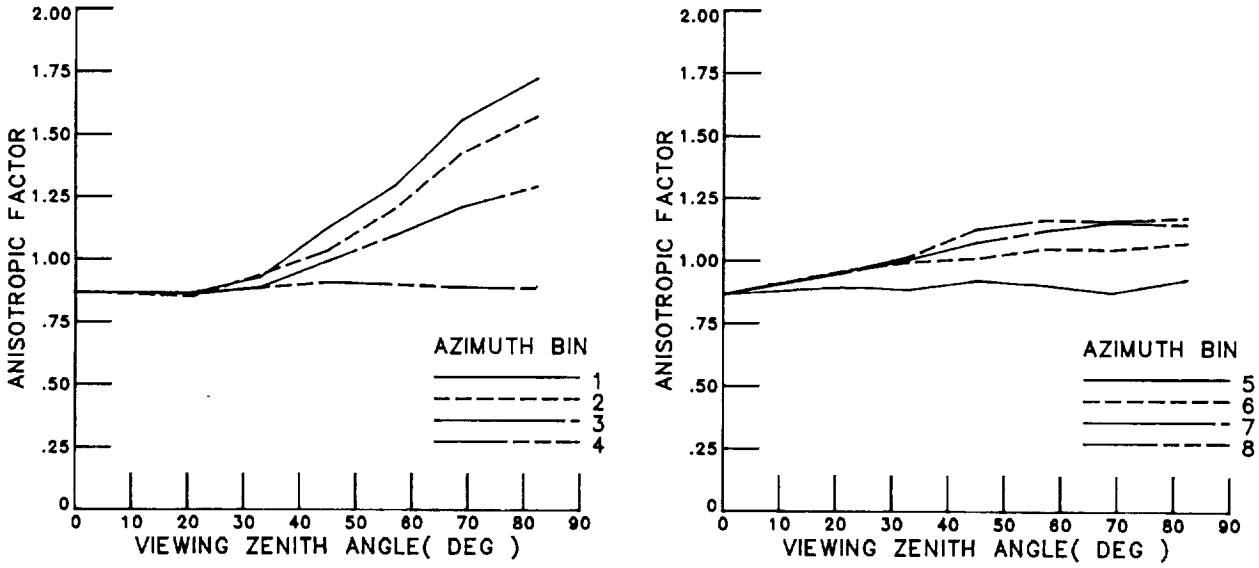
Figure 17. Continued.

SCENE TYPE : MOSTLY CLOUDY OVER LAND-OCEAN MIX
DATA 1 - SW ANISOTROPIC FACTOR
2 - STANDARD DEVIATION OF SW RADIANCES(W/M**2/SR)
3 - CORRELATION OF LW AND SW RADIANCES
( ) - DATA SOURCE

SUN ZENITH : 45.6 - 53.1
MEAN ALBEDO : .3485 (19)
NORMALIZED ALBEDO : 1.2559 (19)

RELATIVE AZIMUTH

BIN NO. / VIEWING ZENITH BIN NO.	ANGLE(DEG.)	1 0-9	2 9-30	3 30-60	4 60-90	5 90-120	6 120-150	7 150-171	8 171-180
1	0-15	.87 (2)	.87 (2)	.87 (2)	.87 (2)	.87 (2)	.87 (2)	.87 (2)	.87 (2)
		36.9 (2)	36.9 (2)	36.9 (2)	36.9 (2)	36.9 (2)	36.9 (2)	36.9 (2)	36.9 (2)
		-.426 (2)	-.426 (2)	-.426 (2)	-.426 (2)	-.426 (2)	-.426 (2)	-.426 (2)	-.426 (2)
2	15-27	.87 (2)	.85 (2)	.86 (2)	.86 (2)	.90 (2)	.96 (2)	.95 (2)	.95 (2)
		36.3 (2)	35.4 (2)	36.1 (2)	36.2 (2)	36.1 (2)	37.9 (2)	37.0 (2)	37.3 (2)
		-.436 (2)	-.438 (2)	-.415 (2)	-.411 (2)	-.377 (2)	-.357 (2)	-.349 (2)	-.369 (2)
3	27-39	.93 (2)	.94 (2)	.89 (2)	.89 (2)	.89 (2)	1.00 (2)	1.01 (2)	1.02 (2)
		34.7 (2)	36.6 (2)	35.5 (2)	35.3 (2)	34.3 (2)	37.7 (2)	36.8 (2)	35.4 (2)
		-.440 (2)	-.415 (2)	-.393 (2)	-.451 (2)	-.427 (2)	-.299 (2)	-.292 (2)	-.340 (2)
4	39-51	1.12 (2)	1.03 (2)	.99 (2)	.91 (2)	.92 (2)	1.01 (2)	1.07 (2)	1.13 (2)
		35.2 (2)	35.4 (2)	37.1 (2)	34.6 (2)	35.7 (2)	36.4 (2)	36.1 (2)	37.0 (2)
		-.407 (2)	-.417 (2)	-.442 (2)	-.416 (2)	-.436 (2)	-.382 (2)	-.279 (2)	-.332 (2)
5	51-63	1.29 (2)	1.20 (2)	1.10 (2)	.90 (2)	.91 (2)	1.05 (2)	1.12 (2)	1.16 (2)
		34.5 (2)	34.6 (2)	36.8 (2)	33.1 (2)	33.5 (2)	36.5 (2)	33.0 (2)	35.0 (2)
		-.340 (2)	-.375 (2)	-.426 (2)	-.442 (2)	-.392 (2)	-.314 (2)	-.230 (2)	-.202 (2)
6	63-75	1.56 (2)	1.43 (2)	1.21 (2)	.89 (2)	.88 (2)	1.05 (2)	1.15 (2)	1.16 (2)
		37.4 (2)	38.1 (2)	36.6 (2)	31.6 (2)	31.9 (2)	33.2 (2)	30.0 (2)	29.9 (2)
		-.294 (2)	-.366 (2)	-.404 (2)	-.499 (2)	-.429 (2)	-.344 (2)	-.231 (2)	-.235 (2)
7	75-90	1.73 (2)	1.57 (2)	1.29 (2)	.89 (2)	.92 (2)	1.07 (2)	1.15 (2)	1.17 (2)
		35.2 (2)	39.0 (2)	36.6 (2)	28.8 (2)	30.3 (2)	30.4 (2)	27.0 (2)	26.8 (2)
		-.261 (2)	-.322 (2)	-.406 (2)	-.635 (2)	-.431 (2)	-.210 (2)	-.181 (2)	-.198 (2)



(d) Solar-zenith-angle bin 4, 45.57° to 53.13°.

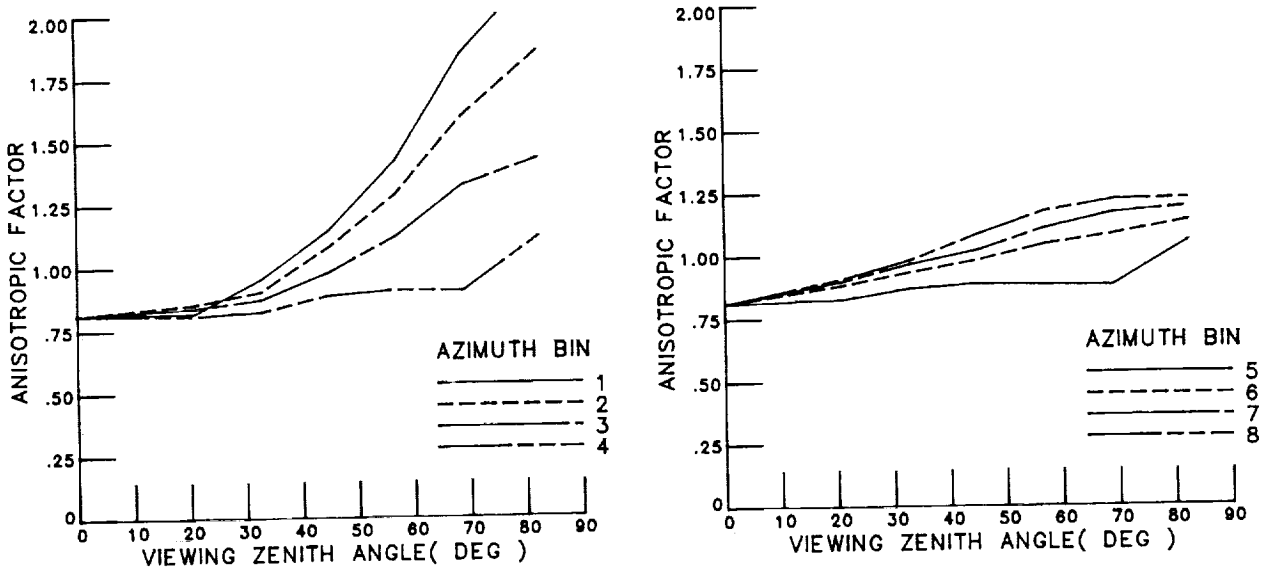
Figure 17. Continued.

SCENE TYPE : MOSTLY CLOUDY OVER LAND-OCEAN MIX
DATA 1 - SW ANISOTROPIC FACTOR
2 - STANDARD DEVIATION OF SW RADIANCES(W/M**2/SR)
3 - CORRELATION OF LW AND SW RADIANCES
( ) - DATA SOURCE

SUN ZENITH : 53.1 - 60.0
MEAN ALBEDO : .3750 (19)
NORMALIZED ALBEDO : 1.3514 (19)

RELATIVE AZIMUTH

BIN NO.	1	2	3	4	5	6	7	8
ANGLE(DEG.)	0-9	9-30	30-60	60-90	90-120	120-150	150-171	171-180
VIEWING ZENITH BIN NO. ANGLE(DEG.)								
1 0-15	.81 (2)	.81 (2)	.81 (2)	.81 (2)	.81 (2)	.81 (2)	.81 (2)	.81 (2)
	32.3 (2)	32.3 (2)	32.3 (2)	32.3 (2)	32.3 (2)	32.3 (2)	32.3 (2)	32.3 (2)
	-.416 (2)	-.416 (2)	-.416 (2)	-.416 (2)	-.416 (2)	-.416 (2)	-.416 (2)	-.416 (2)
2 15-27	.82 (2)	.85 (2)	.84 (2)	.81 (2)	.83 (2)	.88 (2)	.90 (2)	.91 (2)
	31.0 (2)	34.2 (2)	32.2 (2)	30.8 (2)	31.4 (2)	31.8 (2)	32.6 (2)	31.6 (2)
	-.420 (2)	-.433 (2)	-.453 (2)	-.415 (2)	-.369 (2)	-.360 (2)	-.368 (2)	-.353 (2)
3 27-39	.95 (2)	.90 (2)	.87 (2)	.82 (2)	.87 (2)	.93 (2)	.97 (2)	.98 (2)
	34.4 (2)	30.8 (2)	30.8 (2)	29.9 (2)	31.9 (2)	31.1 (2)	31.1 (2)	30.8 (2)
	-.440 (2)	-.401 (2)	-.411 (2)	-.378 (2)	-.353 (2)	-.267 (2)	-.337 (2)	-.293 (2)
4 39-51	1.14 (2)	1.08 (2)	.98 (2)	.88 (2)	.89 (2)	.98 (2)	1.02 (2)	1.09 (2)
	31.4 (2)	32.4 (2)	32.5 (2)	31.3 (2)	31.0 (2)	32.4 (2)	30.6 (2)	32.8 (2)
	-.328 (2)	-.393 (2)	-.394 (2)	-.360 (2)	-.430 (2)	-.334 (2)	-.285 (2)	-.253 (2)
5 51-63	1.46 (2)	1.29 (2)	1.12 (2)	.90 (2)	.88 (2)	1.04 (2)	1.11 (2)	1.18 (2)
	32.2 (2)	34.6 (2)	34.6 (2)	28.7 (2)	28.9 (2)	31.0 (2)	29.8 (2)	31.2 (2)
	-.284 (2)	-.354 (2)	-.383 (2)	-.452 (2)	-.462 (2)	-.308 (2)	-.184 (2)	-.179 (2)
6 63-75	1.69 (2)	1.60 (2)	1.32 (2)	.90 (2)	.88 (2)	1.08 (2)	1.17 (2)	1.22 (2)
	37.3 (2)	38.7 (2)	36.2 (2)	28.0 (2)	28.7 (2)	28.8 (2)	26.5 (2)	27.6 (2)
	-.263 (2)	-.280 (2)	-.357 (2)	-.491 (2)	-.480 (2)	-.218 (2)	-.209 (2)	-.173 (2)
7 75-90	2.16 (2)	1.85 (2)	1.43 (2)	1.11 (2)	1.05 (2)	1.14 (2)	1.19 (2)	1.22 (2)
	39.2 (2)	37.3 (2)	36.8 (2)	30.8 (2)	29.5 (2)	27.8 (2)	23.6 (2)	23.8 (2)
	-.039 (2)	-.208 (2)	-.317 (2)	-.387 (2)	-.367 (2)	-.233 (2)	-.219 (2)	-.196 (2)



(e) Solar-zenith-angle bin 5, 53.13° to 60.00°.

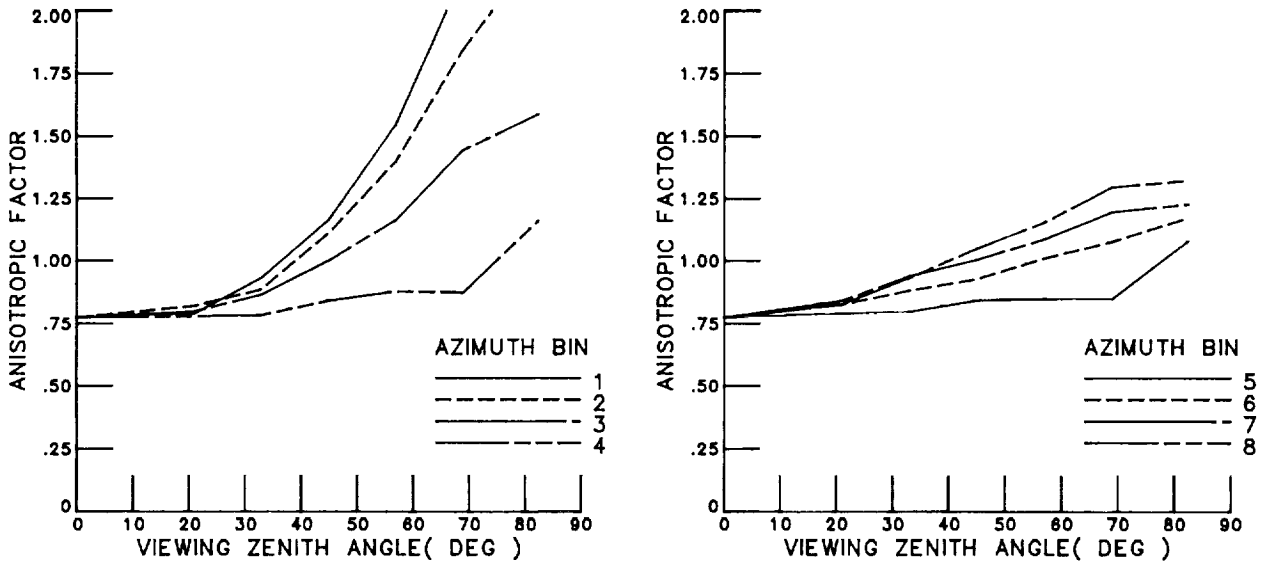
Figure 17. Continued.

SCENE TYPE : MOSTLY CLOUDY OVER LAND-OCEAN MIX
DATA 1 - SW ANISOTROPIC FACTOR
2 - STANDARD DEVIATION OF SW RADIANCES(W/M**2/SR)
3 - CORRELATION OF LW AND SW RADIANCES
( ) - DATA SOURCE

SUN ZENITH : 60.C - 66.4
MEAN ALBEDO : .4C69 (19)
NORMALIZED ALBEDO : 1.4661 (19)

RELATIVE AZIMUTH

BIN NO. / ANGLE(DEG.)		1 0-9	2 9-30	3 30-60	4 60-90	5 90-120	6 120-150	7 150-171	8 171-180
VIEWING ZENITH BIN NO.	ANGLE(DEG.)								
1	0-15	.78 (2)	.78 (2)	.78 (2)	.78 (2)	.7E (2)	.78 (2)	.78 (2)	.78 (2)
		26.0 (2)	26.0 (2)	26.0 (2)	26.0 (2)	26.C (2)	26.0 (2)	26.0 (2)	26.0 (2)
		-.363 (2)	-.363 (2)	-.363 (2)	-.363 (2)	-.362 (2)	-.363 (2)	-.363 (2)	-.363 (2)
2	15-27	.79 (2)	.82 (2)	.80 (2)	.78 (2)	.7S (2)	.83 (2)	.84 (2)	.83 (2)
		24.6 (2)	26.4 (2)	25.2 (2)	25.3 (2)	24.S (2)	26.0 (2)	24.6 (2)	24.5 (2)
		-.314 (2)	-.343 (2)	-.367 (2)	-.412 (2)	-.335 (2)	-.338 (2)	-.271 (2)	-.369 (2)
3	27-39	.93 (2)	.89 (2)	.87 (2)	.78 (2)	.8C (2)	.88 (2)	.94 (2)	.93 (2)
		27.C (2)	25.4 (2)	25.3 (2)	22.2 (2)	23.E (2)	23.5 (2)	24.5 (2)	23.7 (2)
		-.339 (2)	-.391 (2)	-.377 (2)	-.382 (2)	-.30E (2)	-.28E (2)	-.275 (2)	-.365 (2)
4	39-51	1.1C (2)	1.11 (2)	1.0C (2)	.84 (2)	.84 (2)	.93 (2)	1.01 (2)	1.05 (2)
		27.2 (2)	27.4 (2)	26.9 (2)	23.3 (2)	24.C (2)	24.8 (2)	24.2 (2)	26.1 (2)
		-.255 (2)	-.382 (2)	-.356 (2)	-.423 (2)	-.375 (2)	-.296 (2)	-.243 (2)	-.309 (2)
5	51-63	1.55 (2)	1.40 (2)	1.16 (2)	.88 (2)	.85 (2)	1.01 (2)	1.09 (2)	1.16 (2)
		28.3 (2)	30.C (2)	30.2 (2)	22.8 (2)	22.C (2)	23.6 (2)	22.9 (2)	22.5 (2)
		-.189 (2)	-.259 (2)	-.421 (2)	-.468 (2)	-.439 (2)	-.261 (2)	-.184 (2)	-.159 (2)
6	63-75	2.15 (2)	1.85 (2)	1.44 (2)	.87 (2)	.85 (2)	1.08 (2)	1.20 (2)	1.30 (2)
		42.1 (2)	38.9 (2)	33.5 (2)	22.6 (2)	22.C (2)	22.2 (2)	20.6 (2)	23.3 (2)
		-.152 (2)	-.204 (2)	-.308 (2)	-.486 (2)	-.455 (2)	-.268 (2)	-.247 (2)	-.102 (2)
7	75-90	2.65 (2)	2.25 (2)	1.59 (2)	1.16 (2)	1.0E (2)	1.18 (2)	1.23 (2)	1.32 (2)
		45.8 (2)	43.1 (2)	32.3 (2)	25.2 (2)	22.E (2)	19.8 (2)	18.9 (2)	19.2 (2)
		-.052 (2)	-.211 (2)	-.310 (2)	-.367 (2)	-.324 (2)	-.146 (2)	-.235 (2)	-.050 (2)



(f) Solar-zenith-angle bin 6, 60.00° to 66.42°.

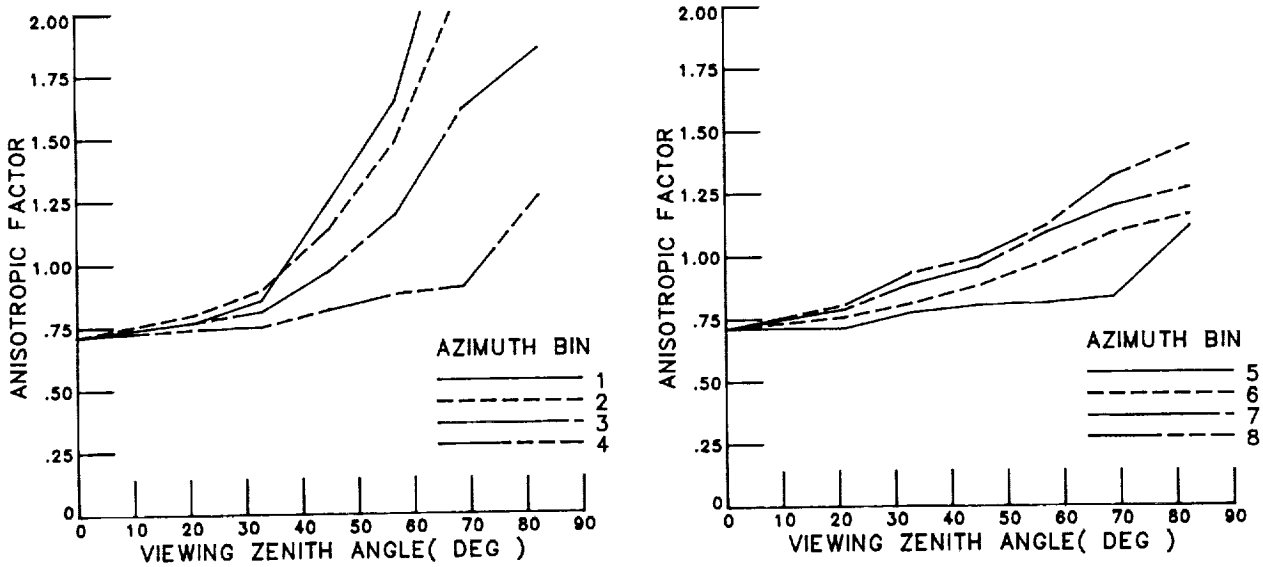
Figure 17. Continued.

SCENE TYPE : MOSTLY CLOUDY OVER LAND-OCEAN MIX
DATA 1 - SW ANISOTROPIC FACTOR
2 - STANDARD DEVIATION OF SW RADIANCES(W/M**2/SR)
3 - CORRELATION OF LW AND SW RADIANCES
( ) - DATA SOURCE

SUN ZENITH : 66.4 - 72.5
MEAN ALBEDO : .4473 (19)
NORMALIZED ALBEDO : 1.6117 (19)

RELATIVE AZIMUTH

VIEWING ZENITH BIN NO.	VIEWING ZENITH ANGLE(DEG.)	BIN NO. / ANGLE(DEG.) 1 0-9	2 9-30	3 30-60	4 60-90	5 90-120	6 120-150	7 150-171	8 171-180
1	0-15	.71 (2)	.71 (2)	.71 (2)	.71 (2)	.71 (2)	.71 (2)	.71 (2)	.71 (2)
		18.6 (2)	18.6 (2)	18.6 (2)	18.6 (2)	18.6 (2)	18.6 (2)	18.6 (2)	18.6 (2)
		-.346 (2)	-.346 (2)	-.346 (2)	-.346 (2)	-.346 (2)	-.346 (2)	-.346 (2)	-.346 (2)
2	15-27	.77 (2)	.80 (2)	.77 (2)	.74 (2)	.71 (2)	.76 (2)	.79 (2)	.81 (2)
		18.6 (2)	19.8 (2)	19.2 (2)	18.9 (2)	17.7 (2)	18.3 (2)	18.7 (2)	19.1 (2)
		-.351 (2)	-.306 (2)	-.328 (2)	-.319 (2)	-.334 (2)	-.249 (2)	-.372 (2)	-.268 (2)
3	27-39	.86 (2)	.90 (2)	.81 (2)	.75 (2)	.76 (2)	.81 (2)	.89 (2)	.93 (2)
		18.6 (2)	19.6 (2)	19.4 (2)	17.6 (2)	19.6 (2)	17.6 (2)	18.6 (2)	17.5 (2)
		-.285 (2)	-.367 (2)	-.355 (2)	-.328 (2)	-.425 (2)	-.199 (2)	-.228 (2)	-.124 (2)
4	39-51	1.24 (2)	1.13 (2)	.97 (2)	.82 (2)	.80 (2)	.88 (2)	.96 (2)	.99 (2)
		21.4 (2)	22.5 (2)	21.3 (2)	18.2 (2)	18.0 (2)	18.7 (2)	17.8 (2)	18.2 (2)
		-.293 (2)	-.333 (2)	-.297 (2)	-.422 (2)	-.388 (2)	-.290 (2)	-.139 (2)	-.232 (2)
5	51-63	1.64 (2)	1.48 (2)	1.19 (2)	.86 (2)	.81 (2)	.98 (2)	1.09 (2)	1.12 (2)
		27.6 (2)	25.7 (2)	24.6 (2)	18.2 (2)	17.1 (2)	17.7 (2)	17.2 (2)	16.8 (2)
		-.090 (2)	-.249 (2)	-.266 (2)	-.435 (2)	-.395 (2)	-.236 (2)	-.217 (2)	-.237 (2)
6	63-75	2.54 (2)	2.11 (2)	1.61 (2)	.91 (2)	.84 (2)	1.09 (2)	1.19 (2)	1.31 (2)
		43.6 (2)	39.3 (2)	30.3 (2)	17.8 (2)	15.6 (2)	15.7 (2)	16.1 (2)	18.7 (2)
		-.076 (2)	-.143 (2)	-.270 (2)	-.460 (2)	-.498 (2)	-.187 (2)	-.237 (2)	-.155 (2)
7	75-90	3.33 (2)	2.65 (2)	1.85 (2)	1.26 (2)	1.11 (2)	1.16 (2)	1.27 (2)	1.44 (2)
		50.1 (2)	47.8 (2)	34.1 (2)	22.7 (2)	18.4 (2)	14.8 (2)	14.1 (2)	15.5 (2)
		-.069 (2)	-.074 (2)	-.251 (2)	-.346 (2)	-.356 (2)	-.200 (2)	-.314 (2)	-.137 (2)



(g) Solar-zenith-angle bin 7, 66.42° to 72.54°.

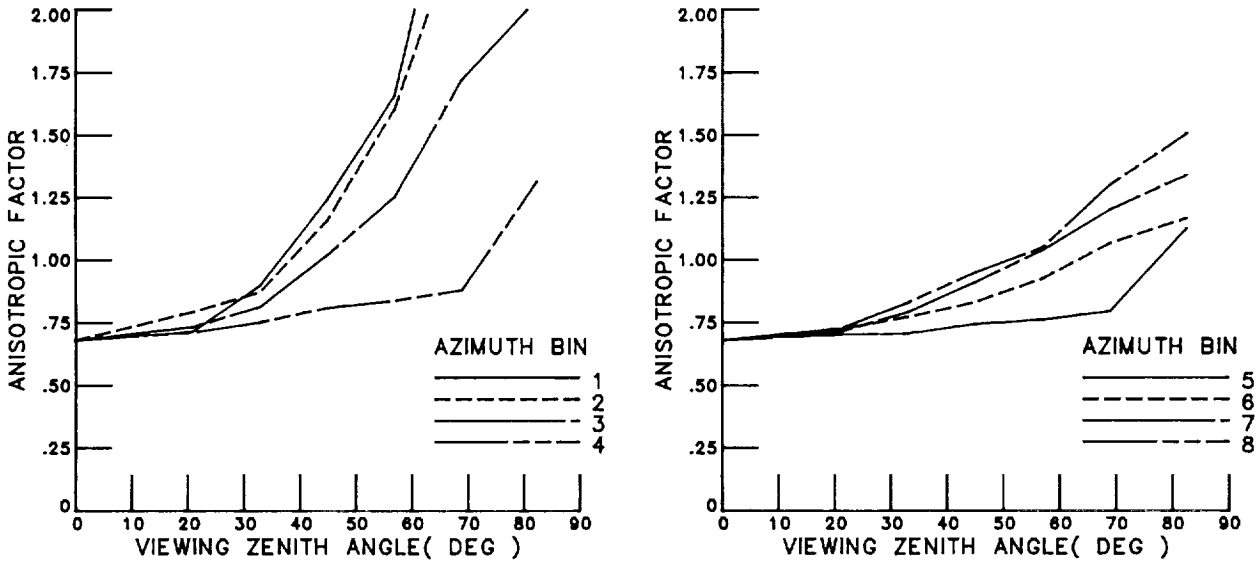
Figure 17. Continued.

SCENE TYPE : MOSTLY CLOUDY OVER LAND-OCEAN MIX
DATA 1 - SW ANISOTROPIC FACTOR
2 - STANDARD DEVIATION OF SW RADIANCES(W/M**2/SR)
3 - CORRELATION OF LW AND SW RADIANCES
( ) - DATA SOURCE

SUN ZENITH : 72.5 - 78.5
MEAN ALBEDO : .4530 (19)
NORMALIZED ALBEDO : 1.7766 (19)

RELATIVE AZIMUTH

VIEWING ZENITH BIN NO.	VIEWING ZENITH ANGLE(DEG.)	BIN NO. 1 ANGLE(DEG.) 0-9	2 9-30	3 30-60	4 60-90	5 90-120	6 120-150	7 150-171	8 171-180
1	0-15	.68 (2)	.68 (2)	.68 (2)	.68 (2)	.68 (2)	.68 (2)	.68 (2)	.68 (2)
		12.7 (2)	12.7 (2)	12.7 (2)	12.7 (2)	12.7 (2)	12.7 (2)	12.7 (2)	12.7 (2)
		-.252 (2)	-.252 (2)	-.252 (2)	-.252 (2)	-.252 (2)	-.252 (2)	-.252 (2)	-.252 (2)
2	15-27	.71 (2)	.79 (2)	.73 (2)	.71 (2)	.70 (2)	.73 (2)	.71 (2)	.73 (2)
		13.0 (2)	12.7 (2)	13.3 (2)	11.8 (2)	12.9 (2)	12.6 (2)	12.4 (2)	12.1 (2)
		-.106 (2)	-.212 (2)	-.340 (2)	-.205 (2)	-.366 (2)	-.262 (2)	-.308 (2)	-.228 (2)
3	27-39	.90 (2)	.87 (2)	.81 (2)	.75 (2)	.71 (2)	.77 (2)	.79 (2)	.83 (2)
		15.1 (2)	12.3 (2)	12.6 (2)	12.9 (2)	11.6 (2)	11.8 (2)	12.0 (2)	10.2 (2)
		-.225 (2)	-.348 (2)	-.295 (2)	-.414 (2)	-.424 (2)	-.287 (2)	-.288 (2)	-.228 (2)
4	39-51	1.24 (2)	1.16 (2)	1.02 (2)	.81 (2)	.74 (2)	.83 (2)	.91 (2)	.95 (2)
		14.8 (2)	14.2 (2)	14.7 (2)	13.2 (2)	11.4 (2)	11.9 (2)	10.7 (2)	10.4 (2)
		-.135 (2)	-.299 (2)	-.357 (2)	-.501 (2)	-.459 (2)	-.272 (2)	-.277 (2)	-.237 (2)
5	51-63	1.66 (2)	1.60 (2)	1.25 (2)	.84 (2)	.76 (2)	.93 (2)	1.04 (2)	1.05 (2)
		21.6 (2)	20.7 (2)	17.2 (2)	12.1 (2)	10.4 (2)	11.7 (2)	11.0 (2)	11.3 (2)
		.119 (2)	-.159 (2)	-.147 (2)	-.461 (2)	-.487 (2)	-.159 (2)	-.251 (2)	-.263 (2)
6	63-75	2.60 (2)	2.37 (2)	1.72 (2)	.88 (2)	.80 (2)	1.07 (2)	1.20 (2)	1.30 (2)
		44.0 (2)	34.8 (2)	24.6 (2)	14.9 (2)	11.0 (2)	11.8 (2)	11.1 (2)	13.4 (2)
		-.050 (2)	-.039 (2)	-.265 (2)	-.328 (2)	-.417 (2)	-.231 (2)	-.182 (2)	-.287 (2)
7	75-90	4.35 (2)	3.23 (2)	2.04 (2)	1.32 (2)	1.13 (2)	1.17 (2)	1.34 (2)	1.51 (2)
		59.9 (2)	40.4 (2)	25.2 (2)	17.6 (2)	13.3 (2)	11.0 (2)	10.9 (2)	11.2 (2)
		-.147 (2)	-.064 (2)	-.164 (2)	-.263 (2)	-.308 (2)	-.218 (2)	-.143 (2)	.098 (2)



(h) Solar-zenith-angle bin 8, 72.54° to 78.46°.

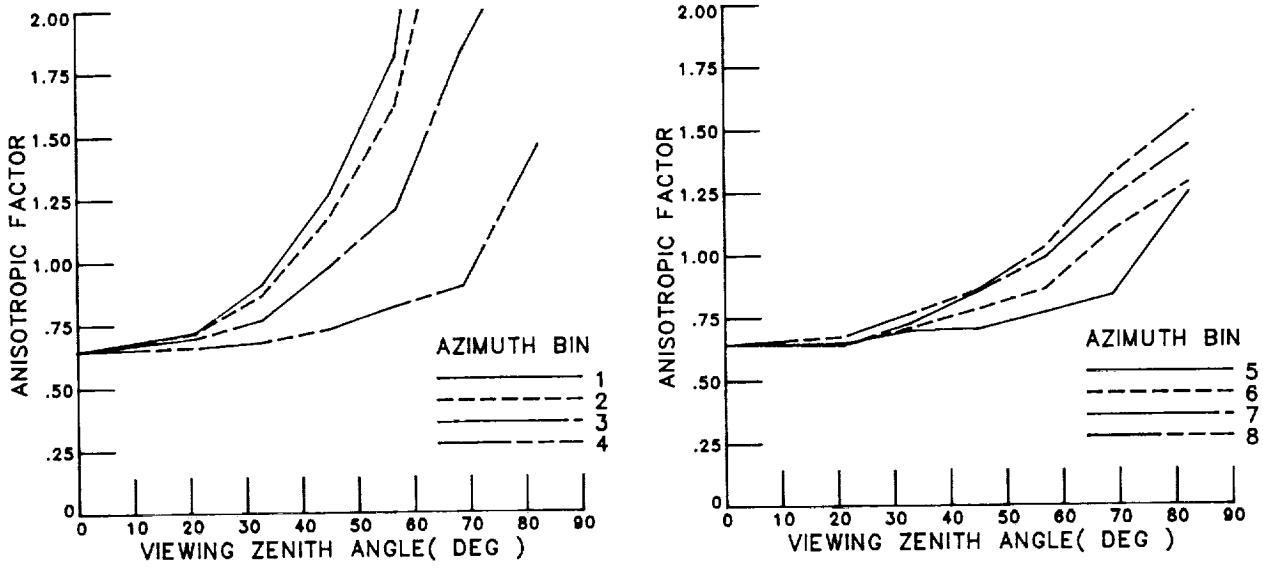
Figure 17. Continued.

SCENE TYPE : MOSTLY CLOUDY OVER LAND-OCEAN MIX
DATA 1 - SW ANISOTROPIC FACTOR
2 - STANDARD DEVIATION OF SW RADIANCES(W/M**2/SR)
3 - CORRELATION OF LW AND SW RADIANCES
( ) - DATA SOURCE

SUN ZENITH : 78.5 - 84.3
MEAN ALBEDO : .5403 (19)
NORMALIZED ALBEDO : 1.9468 (19)

RELATIVE AZIMUTH

VIEWING ZENITH BIN NO.	VIEWING ZENITH ANGLE(DEG.)	BIN NO. / ANGLE(DEG.) 1 0-9	2 9-30	3 30-60	4 60-90	5 90-120	6 120-150	7 150-171	8 171-180
1	0-15	.65 (2)	.65 (2)	.65 (2)	.65 (2)	.65 (2)	.65 (2)	.65 (2)	.65 (2)
		7.4 (2)	7.4 (2)	7.4 (2)	7.4 (2)	7.4 (2)	7.4 (2)	7.4 (2)	7.4 (2)
		-.467 (2)	-.467 (2)	-.467 (2)	-.467 (2)	-.467 (2)	-.467 (2)	-.467 (2)	-.467 (2)
2	15-27	.72 (2)	.72 (2)	.70 (2)	.66 (2)	.65 (2)	.64 (2)	.64 (2)	.67 (2)
		7.9 (2)	7.9 (2)	7.7 (2)	7.1 (2)	7.6 (2)	7.2 (2)	6.9 (2)	6.7 (2)
		-.477 (2)	-.628 (2)	-.562 (2)	-.382 (2)	-.526 (2)	-.455 (2)	-.405 (2)	-.460 (2)
3	27-39	.91 (2)	.87 (2)	.77 (2)	.68 (2)	.70 (2)	.71 (2)	.73 (2)	.77 (2)
		9.1 (2)	8.4 (2)	6.6 (2)	7.0 (2)	7.4 (2)	6.6 (2)	5.8 (2)	6.4 (2)
		-.340 (2)	-.592 (2)	-.453 (2)	-.442 (2)	-.472 (2)	-.483 (2)	-.435 (2)	-.450 (2)
4	39-51	1.26 (2)	1.17 (2)	.98 (2)	.73 (2)	.70 (2)	.78 (2)	.85 (2)	.86 (2)
		9.9 (2)	9.0 (2)	8.6 (2)	6.3 (2)	6.5 (2)	7.1 (2)	6.5 (2)	6.9 (2)
		-.275 (2)	-.419 (2)	-.514 (2)	-.469 (2)	-.442 (2)	-.409 (2)	-.309 (2)	-.424 (2)
5	51-63	1.61 (2)	1.62 (2)	1.21 (2)	.82 (2)	.77 (2)	.86 (2)	.99 (2)	1.03 (2)
		12.5 (2)	12.9 (2)	10.3 (2)	6.6 (2)	5.6 (2)	6.4 (2)	5.5 (2)	6.0 (2)
		-.361 (2)	-.267 (2)	-.309 (2)	-.455 (2)	-.437 (2)	-.336 (2)	-.375 (2)	-.221 (2)
6	63-75	3.54 (2)	2.69 (2)	1.84 (2)	.90 (2)	.84 (2)	1.09 (2)	1.23 (2)	1.32 (2)
		39.6 (2)	28.1 (2)	17.4 (2)	6.5 (2)	6.1 (2)	6.7 (2)	6.7 (2)	7.1 (2)
		-.231 (2)	-.125 (2)	-.263 (2)	-.382 (2)	-.283 (2)	-.231 (2)	-.255 (2)	-.187 (2)
7	75-90	4.67 (2)	3.89 (2)	2.39 (2)	1.46 (2)	1.25 (2)	1.29 (2)	1.43 (2)	1.55 (2)
		55.4 (2)	37.1 (2)	19.0 (2)	10.7 (2)	8.5 (2)	7.1 (2)	7.2 (2)	7.3 (2)
		-.056 (2)	-.090 (2)	-.061 (2)	-.254 (2)	-.231 (2)	-.232 (2)	-.168 (2)	-.131 (2)



(i) Solar-zenith-angle bin 9, 78.46° to 84.26°.

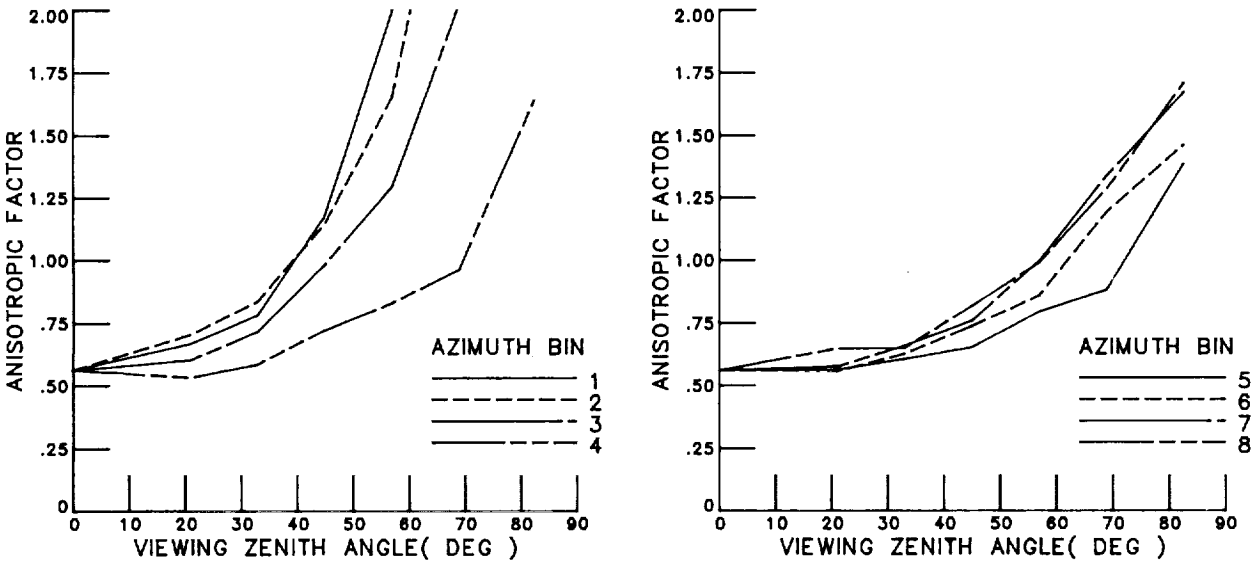
Figure 17. Continued.

SCENE TYPE : MOSTLY CLOUDY OVER LAND-OCEAN MIX
DATA 1 - SW ANISOTROPIC FACTOR
2 - STANDARD DEVIATION OF SW RADIANCES(W/M**2/SR)
3 - CORRELATION OF LW AND SW RADIANCES
( ) - DATA SOURCE

SUN ZENITH : 84.3 - 90.0
MEAN ALBEDO : .5560 (19)
NORMALIZED ALBEDO : 2.1477 (19)

RELATIVE AZIMUTH

BIN NO.	1	2	3	4	5	6	7	8
ANGLE(DEG.)	0-9	9-30	30-60	60-90	90-120	120-150	150-171	171-180
VIEWING ZENITH BIN NO. ANGLE(DEG.)								
1 0-15	.56 (2)	.56 (2)	.56 (2)	.56 (2)	.56 (2)	.56 (2)	.56 (2)	.56 (2)
	2.3 (2)	2.3 (2)	2.3 (2)	2.3 (2)	2.3 (2)	2.3 (2)	2.3 (2)	2.3 (2)
	-.530 (2)	-.530 (2)	-.530 (2)	-.530 (2)	-.530 (2)	-.530 (2)	-.530 (2)	-.530 (2)
2 15-27	.67 (2)	.70 (2)	.60 (2)	.53 (2)	.56 (2)	.56 (2)	.58 (2)	.65 (2)
	2.4 (2)	2.5 (2)	2.3 (2)	2.1 (2)	2.3 (2)	2.1 (2)	2.5 (2)	2.6 (2)
	-.513 (2)	-.479 (2)	-.419 (2)	-.366 (2)	-.450 (2)	-.417 (2)	-.580 (2)	-.517 (2)
3 27-39	.78 (2)	.84 (2)	.72 (2)	.59 (2)	.61 (2)	.63 (2)	.66 (2)	.65 (2)
	2.4 (2)	2.5 (2)	2.0 (2)	2.4 (2)	2.1 (2)	2.1 (2)	2.2 (2)	2.3 (2)
	-.305 (2)	-.431 (2)	-.383 (2)	-.519 (2)	-.356 (2)	-.495 (2)	-.522 (2)	-.430 (2)
4 39-51	1.17 (2)	1.14 (2)	.98 (2)	.72 (2)	.65 (2)	.74 (2)	.76 (2)	.82 (2)
	3.7 (2)	3.7 (2)	3.3 (2)	2.5 (2)	2.1 (2)	2.7 (2)	2.4 (2)	2.5 (2)
	-.317 (2)	-.411 (2)	-.399 (2)	-.475 (2)	-.320 (2)	-.343 (2)	-.458 (2)	-.461 (2)
5 51-63	1.99 (2)	1.65 (2)	1.29 (2)	.83 (2)	.80 (2)	.86 (2)	1.00 (2)	.99 (2)
	6.5 (2)	5.2 (2)	4.3 (2)	2.4 (2)	2.3 (2)	2.2 (2)	2.6 (2)	2.9 (2)
	-.313 (2)	-.364 (2)	-.331 (2)	-.486 (2)	-.472 (2)	-.355 (2)	-.492 (2)	-.470 (2)
6 63-75	3.79 (2)	2.91 (2)	2.02 (2)	.96 (2)	.88 (2)	1.19 (2)	1.34 (2)	1.29 (2)
	16.1 (2)	9.5 (2)	7.0 (2)	2.3 (2)	2.0 (2)	3.0 (2)	3.2 (2)	2.9 (2)
	-.255 (2)	-.197 (2)	-.240 (2)	-.357 (2)	-.256 (2)	-.138 (2)	-.319 (2)	-.305 (2)
7 75-90	5.02 (2)	4.35 (2)	2.75 (2)	1.64 (2)	1.35 (2)	1.46 (2)	1.67 (2)	1.71 (2)
	19.3 (2)	14.8 (2)	7.4 (2)	4.2 (2)	3.4 (2)	3.7 (2)	3.3 (2)	2.6 (2)
	-.041 (2)	-.157 (2)	.013 (2)	-.218 (2)	-.220 (2)	-.256 (2)	-.260 (2)	-.260 (2)



(j) Solar-zenith-angle bin 10, 84.26° to 90.00°.

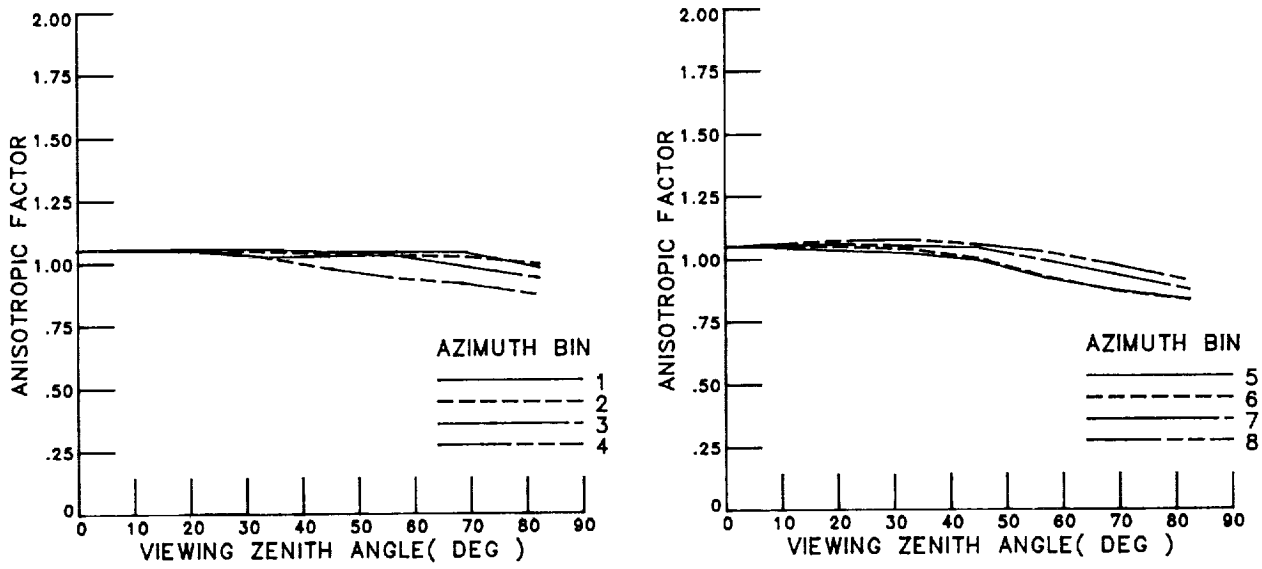
Figure 17. Concluded.

SCENE TYPE : OVERCAST
DATA 1 - SW ANISOTROPIC FACTOR
2 - STANDARD DEVIATION OF SW RADIANCES(W/M**2/SR)
3 - CORRELATION OF LW AND SW RADIANCES
( ) - DATA SOURCE

SUN ZENITH : .0 - 25.8
MEAN ALBEDO : .4250 (18)
NORMALIZED ALBEDO : 1.0000 (18)

RELATIVE AZIMUTH

BIN NO. / ANGLE(DEG.)		1 0-9	2 9-30	3 30-60	4 60-90	5 90-120	6 120-150	7 150-171	8 171-180
VIEWING ZENITH BIN NO.	ANGLE(DEG.)								
1	0-15	1.05 (17) 65.1 (17) -.626 (17)	1.05 (17) 65.1 (17) -.628 (17)	1.05 (17) 65.1 (17) -.628 (17)	1.05 (17) 65.1 (17) -.628 (17)	1.05 (17) 65.1 (17) -.626 (17)	1.05 (17) 65.1 (17) -.628 (17)	1.05 (17) 65.1 (17) -.628 (17)	1.05 (17) 65.1 (17) -.628 (17)
2	15-27	1.06 (17) 64.0 (17) -.616 (17)	1.05 (17) 63.4 (17) -.643 (17)	1.06 (17) 64.2 (17) -.631 (17)	1.05 (17) 64.7 (17) -.623 (17)	1.03 (17) 64.2 (17) -.626 (17)	1.05 (17) 63.9 (17) -.621 (17)	1.06 (17) 63.2 (17) -.599 (17)	1.07 (17) 66.0 (17) -.625 (17)
3	27-39	1.06 (17) 60.0 (17) -.584 (17)	1.05 (17) 61.5 (17) -.647 (17)	1.02 (17) 62.0 (17) -.645 (17)	1.03 (17) 62.0 (17) -.621 (17)	1.02 (17) 62.4 (17) -.601 (17)	1.04 (17) 61.9 (17) -.617 (17)	1.05 (17) 61.5 (17) -.599 (17)	1.08 (17) 60.1 (17) -.580 (17)
4	39-51	1.04 (17) 60.0 (17) -.622 (17)	1.04 (17) 59.9 (17) -.614 (17)	1.03 (17) 61.4 (17) -.636 (17)	.98 (17) 61.7 (17) -.679 (17)	.96 (17) 60.3 (17) -.596 (17)	1.00 (17) 59.3 (17) -.593 (17)	1.04 (17) 59.1 (17) -.578 (17)	1.06 (17) 59.2 (17) -.576 (17)
5	51-63	1.04 (17) 56.9 (17) -.645 (17)	1.03 (17) 56.6 (17) -.636 (17)	1.03 (17) 56.2 (17) -.636 (17)	.94 (17) 57.2 (17) -.677 (17)	.92 (17) 57.3 (17) -.647 (17)	.93 (17) 55.8 (17) -.627 (17)	.99 (17) 56.1 (17) -.597 (17)	1.03 (17) 56.3 (17) -.570 (17)
6	63-75	1.04 (17) 52.6 (17) -.643 (17)	1.02 (17) 51.4 (17) -.618 (17)	.98 (17) 51.8 (17) -.644 (17)	.92 (17) 51.6 (17) -.680 (17)	.87 (17) 52.8 (17) -.677 (17)	.87 (17) 50.2 (17) -.634 (17)	.94 (17) 50.0 (17) -.619 (17)	.98 (17) 51.0 (17) -.586 (17)
7	75-90	.98 (17) 49.5 (17) -.646 (17)	.99 (17) 46.7 (17) -.599 (17)	.94 (17) 46.5 (17) -.647 (17)	.87 (17) 44.7 (17) -.661 (17)	.83 (17) 45.3 (17) -.682 (17)	.83 (17) 43.9 (17) -.663 (17)	.87 (17) 42.9 (17) -.639 (17)	.91 (17) 44.2 (17) -.583 (17)



(a) Solar-zenith-angle bin 1, 0° to 25.84°.

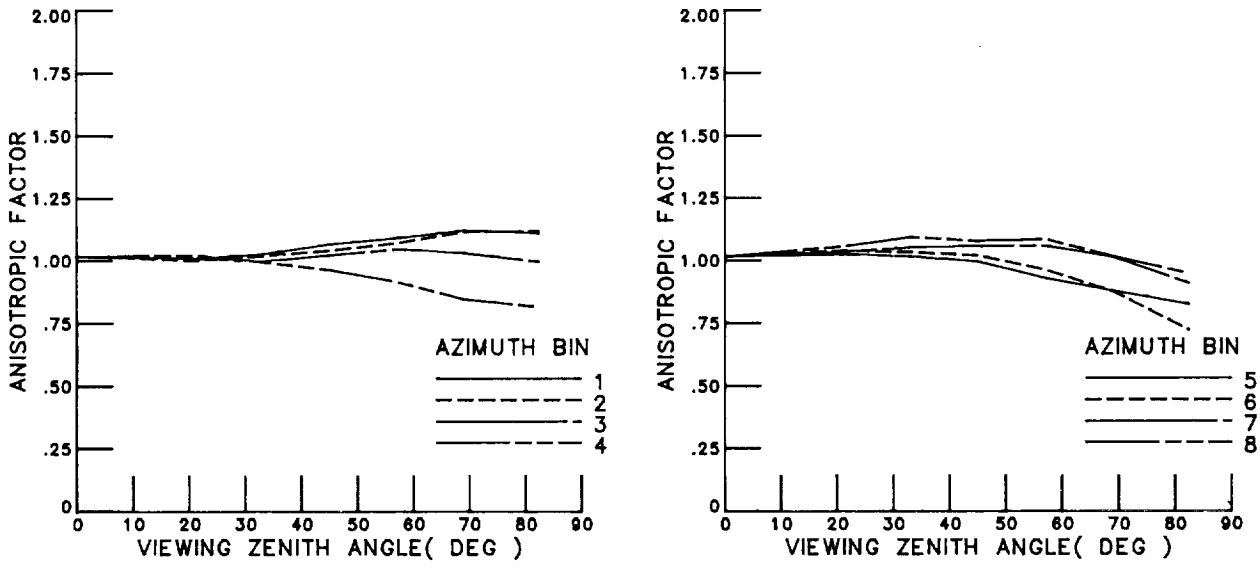
Figure 18. Bidirectional model for overcast scene. (See table 5 for explanation of data sources.)

SCENE TYPE : OVERCAST
DATA 1 - SW ANISOTROPIC FACTOR
2 - STANDARD DEVIATION OF SW RADIANCES(W/M**2/SR)
3 - CORRELATION OF LW AND SW RADIANCES
( ) - DATA SOURCE

SUN ZENITH : 25.8 - 36.9
MEAN ALBEDO : .4350 (18)
NORMALIZED ALBEDO : 1.0235 (18)

RELATIVE AZIMUTH

BIN NO. / VIEWING ZENITH ANGLE(DEG.)		1 0-9	2 9-30	3 30-60	4 60-90	5 90-120	6 120-150	7 150-171	8 171-180
1	0-15	1.02 (17)	1.02 (17)	1.02 (17)	1.02 (17)	1.02 (17)	1.02 (17)	1.02 (17)	1.02 (17)
		51.6 (17)	51.6 (17)	51.6 (17)	51.6 (17)	51.6 (17)	51.6 (17)	51.6 (17)	51.6 (17)
		-.477 (17)	-.477 (17)	-.477 (17)	-.477 (17)	-.477 (17)	-.477 (17)	-.477 (17)	-.477 (17)
2	15-27	1.01 (17)	1.00 (17)	1.01 (17)	1.02 (17)	1.02 (17)	1.04 (17)	1.03 (17)	1.06 (17)
		50.1 (17)	50.5 (17)	49.9 (17)	50.5 (17)	51.3 (17)	50.5 (17)	50.4 (17)	50.4 (17)
		-.542 (17)	-.529 (17)	-.509 (17)	-.484 (17)	-.462 (17)	-.451 (17)	-.466 (17)	-.466 (17)
3	27-39	1.03 (17)	1.02 (17)	1.00 (17)	1.00 (17)	1.01 (17)	1.03 (17)	1.05 (17)	1.09 (17)
		45.3 (17)	50.7 (17)	49.2 (17)	50.4 (17)	49.8 (17)	49.9 (17)	48.2 (17)	48.2 (17)
		-.527 (17)	-.577 (17)	-.548 (17)	-.542 (17)	-.484 (17)	-.459 (17)	-.445 (17)	-.352 (17)
4	39-51	1.07 (17)	1.04 (17)	1.02 (17)	.96 (17)	.95 (17)	1.02 (17)	1.06 (17)	1.08 (17)
		45.3 (17)	48.1 (17)	48.0 (17)	51.5 (17)	49.7 (17)	50.1 (17)	45.9 (17)	46.5 (17)
		-.547 (17)	-.563 (17)	-.552 (17)	-.564 (17)	-.516 (17)	-.453 (17)	-.362 (17)	-.323 (17)
5	51-63	1.09 (17)	1.07 (17)	1.05 (17)	.92 (17)	.93 (17)	.96 (17)	1.06 (17)	1.08 (17)
		43.7 (17)	44.2 (17)	43.7 (17)	52.2 (17)	49.1 (17)	49.2 (17)	42.1 (17)	41.5 (17)
		-.464 (17)	-.518 (17)	-.521 (17)	-.611 (17)	-.585 (17)	-.498 (17)	-.364 (17)	-.325 (17)
6	63-75	1.12 (17)	1.12 (17)	1.03 (17)	.85 (17)	.88 (17)	.88 (17)	1.01 (17)	1.02 (17)
		44.3 (17)	41.8 (17)	43.2 (17)	51.8 (17)	49.1 (17)	47.6 (17)	39.3 (17)	37.9 (17)
		-.523 (17)	-.526 (17)	-.534 (17)	-.663 (17)	-.632 (17)	-.554 (17)	-.339 (17)	-.322 (17)
7	75-90	1.11 (17)	1.12 (17)	1.00 (17)	.82 (17)	.82 (17)	.72 (17)	.91 (17)	.95 (17)
		39.7 (17)	38.2 (17)	40.5 (17)	42.8 (17)	44.0 (17)	34.8 (17)	35.9 (17)	35.8 (17)
		-.390 (17)	-.533 (17)	-.564 (17)	-.641 (17)	-.642 (17)	-.663 (17)	-.396 (17)	-.443 (17)



(b) Solar-zenith-angle bin 2, 25.84° to 36.87°.

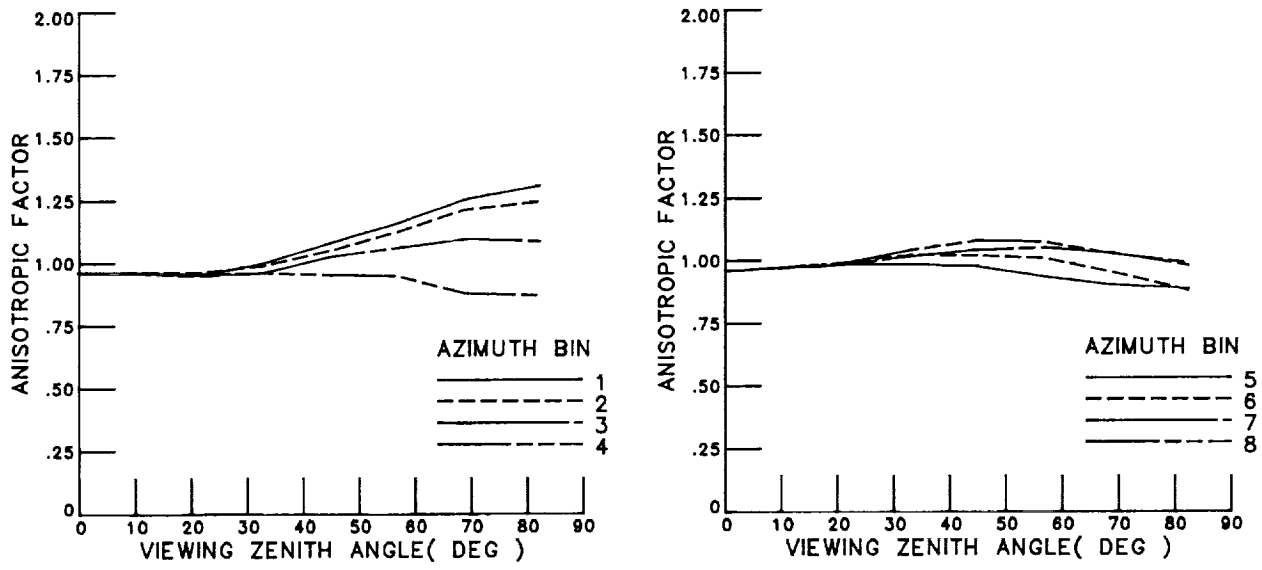
Figure 18. Continued.

SCENE TYPE : OVERCAST
DATA 1 - SW ANISOTROPIC FACTOR
2 - STANDARD DEVIATION OF SW RADIANCES(W/M**2/SR)
3 - CORRELATION OF LW AND SW RADIANCES
( ) - DATA SOURCE

SUN ZENITH : 36.9 - 45.6
MEAN ALBEDO : .4550 (18)
NORMALIZED ALBEDO : 1.0706 (18)

RELATIVE AZIMUTH

BIN NO. / VIEWING ZENITH ANGLE(DEG.) BIN NO.	ANGLE(DEG.)	1 0-9	2 9-30	3 30-60	4 60-90	5 90-120	6 120-150	7 150-171	8 171-180
1	0-15	.96 (17)	.96 (17)	.96 (17)	.96 (17)	.96 (17)	.96 (17)	.96 (17)	.96 (17)
		39.7 (17)	39.7 (17)	39.7 (17)	39.7 (17)	39.7 (17)	39.7 (17)	39.7 (17)	39.7 (17)
		-.405 (17)	-.405 (17)	-.405 (17)	-.405 (17)	-.405 (17)	-.405 (17)	-.405 (17)	-.405 (17)
2	15-27	.95 (17)	.96 (17)	.95 (17)	.95 (17)	.95 (17)	.99 (17)	.98 (17)	.99 (17)
		38.9 (17)	37.7 (17)	38.5 (17)	39.6 (17)	40.3 (17)	39.6 (17)	39.4 (17)	39.5 (17)
		-.492 (17)	-.470 (17)	-.471 (17)	-.447 (17)	-.338 (17)	-.352 (17)	-.390 (17)	-.344 (17)
3	27-39	1.00 (17)	.99 (17)	.96 (17)	.96 (17)	.98 (17)	1.02 (17)	1.02 (17)	1.04 (17)
		36.2 (17)	37.7 (17)	38.7 (17)	38.1 (17)	38.6 (17)	37.5 (17)	37.6 (17)	36.5 (17)
		-.475 (17)	-.551 (17)	-.460 (17)	-.467 (17)	-.362 (17)	-.311 (17)	-.280 (17)	-.297 (17)
4	39-51	1.08 (17)	1.05 (17)	1.02 (17)	.95 (17)	.98 (17)	1.02 (17)	1.04 (17)	1.08 (17)
		35.7 (17)	38.0 (17)	37.1 (17)	39.6 (17)	38.0 (17)	36.3 (17)	34.6 (17)	36.6 (17)
		-.506 (17)	-.496 (17)	-.469 (17)	-.510 (17)	-.421 (17)	-.313 (17)	-.259 (17)	-.196 (17)
5	51-63	1.16 (17)	1.12 (17)	1.06 (17)	.95 (17)	.93 (17)	1.01 (17)	1.05 (17)	1.07 (17)
		33.2 (17)	34.3 (17)	34.8 (17)	39.3 (17)	37.9 (17)	36.6 (17)	32.4 (17)	32.7 (17)
		-.378 (17)	-.458 (17)	-.454 (17)	-.579 (17)	-.494 (17)	-.362 (17)	-.185 (17)	-.214 (17)
6	63-75	1.25 (17)	1.21 (17)	1.09 (17)	.88 (17)	.90 (17)	.95 (17)	1.03 (17)	1.03 (17)
		32.6 (17)	33.1 (17)	34.4 (17)	40.4 (17)	38.4 (17)	36.9 (17)	29.1 (17)	28.5 (17)
		-.400 (17)	-.425 (17)	-.480 (17)	-.583 (17)	-.572 (17)	-.411 (17)	-.177 (17)	-.199 (17)
7	75-90	1.31 (17)	1.25 (17)	1.08 (17)	.87 (17)	.85 (17)	.88 (17)	.98 (17)	.99 (17)
		31.6 (17)	31.1 (17)	34.2 (17)	36.9 (17)	36.4 (17)	32.2 (17)	27.8 (17)	26.3 (17)
		-.361 (17)	-.354 (17)	-.514 (17)	-.664 (17)	-.581 (17)	-.515 (17)	-.151 (17)	-.173 (17)



(c) Solar-zenith-angle bin 3, 36.87° to 45.57°.

Figure 18. Continued.

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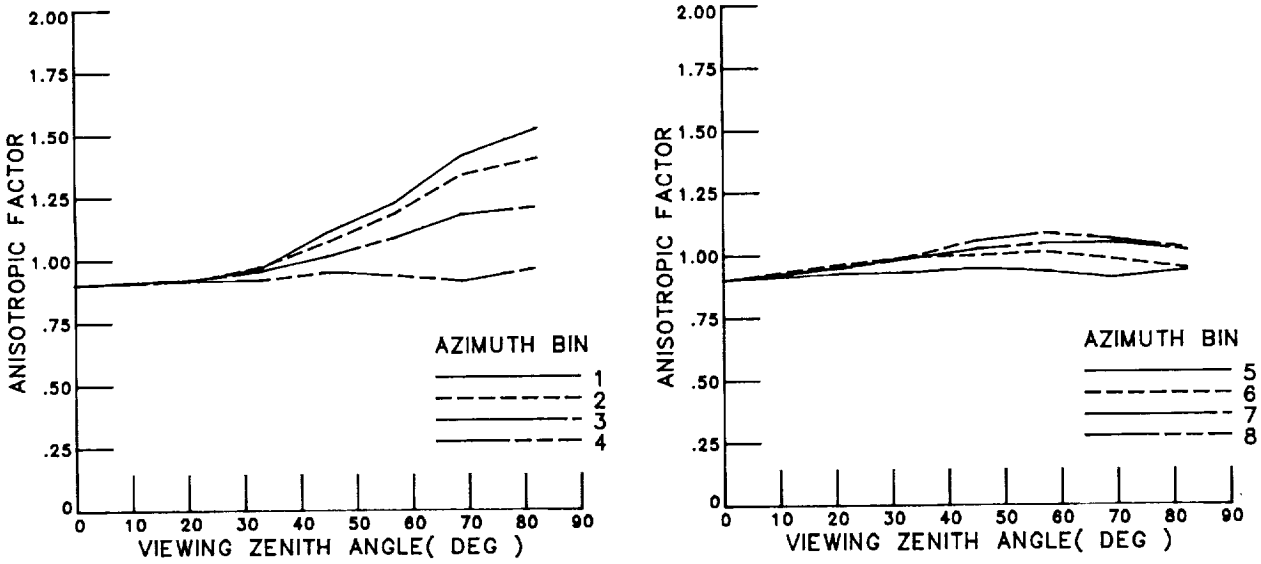
SCENE TYPE : OVERCAST
DATA 1 - SW ANISOTROPIC FACTOR
2 - STANDARD DEVIATION OF SW RADIANCES(W/M**2/SR)
3 - CORRELATION OF LW AND SW RADIANCES
( ) - DATA SOURCE

SUN ZENITH : 45.6 - 53.1
MEAN ALBEDO : .4600 (18)
NORMALIZED ALBEDO : 1.1294 (18)

RELATIVE AZIMUTH

BIN NO.	1	2	3	4	5	6	7	8
ANGLE(DEG.)	0-9	9-30	30-60	60-90	90-120	120-150	150-171	171-180
VIEWING ZENITH BIN NO. ANGLE(DEG.)								
1 0-15	.90 (17)	.90 (17)	.90 (17)	.90 (17)	.90 (17)	.90 (17)	.90 (17)	.90 (17)
	34.6 (17)	34.6 (17)	34.6 (17)	34.6 (17)	34.6 (17)	34.6 (17)	34.6 (17)	34.6 (17)
	-.406 (17)	-.406 (17)	-.406 (17)	-.406 (17)	-.406 (17)	-.406 (17)	-.406 (17)	-.406 (17)
2 15-27	.92 (17)	.92 (17)	.92 (17)	.92 (17)	.92 (17)	.96 (17)	.95 (17)	.95 (17)
	33.5 (17)	33.9 (17)	33.4 (17)	35.0 (17)	34.1 (17)	34.5 (17)	33.2 (17)	32.8 (17)
	-.406 (17)	-.497 (17)	-.464 (17)	-.468 (17)	-.381 (17)	-.307 (17)	-.342 (17)	-.298 (17)
3 27-39	.97 (17)	.97 (17)	.96 (17)	.92 (17)	.93 (17)	.99 (17)	.99 (17)	.99 (17)
	32.0 (17)	33.7 (17)	32.7 (17)	32.8 (17)	31.5 (17)	34.0 (17)	32.5 (17)	31.0 (17)
	-.426 (17)	-.514 (17)	-.451 (17)	-.468 (17)	-.400 (17)	-.298 (17)	-.317 (17)	-.212 (17)
4 39-51	1.11 (17)	1.07 (17)	1.02 (17)	.95 (17)	.95 (17)	1.00 (17)	1.02 (17)	1.06 (17)
	33.2 (17)	32.0 (17)	32.4 (17)	33.0 (17)	32.3 (17)	33.3 (17)	31.5 (17)	31.3 (17)
	-.443 (17)	-.471 (17)	-.458 (17)	-.481 (17)	-.437 (17)	-.268 (17)	-.169 (17)	-.169 (17)
5 51-63	1.23 (17)	1.16 (17)	1.09 (17)	.94 (17)	.93 (17)	1.01 (17)	1.04 (17)	1.09 (17)
	30.7 (17)	31.3 (17)	32.1 (17)	32.8 (17)	31.5 (17)	31.8 (17)	29.4 (17)	29.8 (17)
	-.314 (17)	-.420 (17)	-.415 (17)	-.504 (17)	-.454 (17)	-.248 (17)	-.191 (17)	-.135 (17)
6 63-75	1.42 (17)	1.34 (17)	1.18 (17)	.92 (17)	.91 (17)	.98 (17)	1.05 (17)	1.06 (17)
	30.4 (17)	30.8 (17)	30.7 (17)	33.4 (17)	31.7 (17)	30.6 (17)	26.1 (17)	25.2 (17)
	-.157 (17)	-.245 (17)	-.401 (17)	-.534 (17)	-.480 (17)	-.240 (17)	-.158 (17)	-.112 (17)
7 75-90	1.52 (17)	1.41 (17)	1.21 (17)	.97 (17)	.94 (17)	.94 (17)	1.02 (17)	1.02 (17)
	29.1 (17)	29.6 (17)	31.0 (17)	29.4 (17)	29.6 (17)	26.1 (17)	23.5 (17)	22.0 (17)
	-.122 (17)	-.164 (17)	-.364 (17)	-.622 (17)	-.408 (17)	-.069 (17)	-.079 (17)	-.048 (17)



(d) Solar-zenith-angle bin 4, 45.57° to 53.13°.

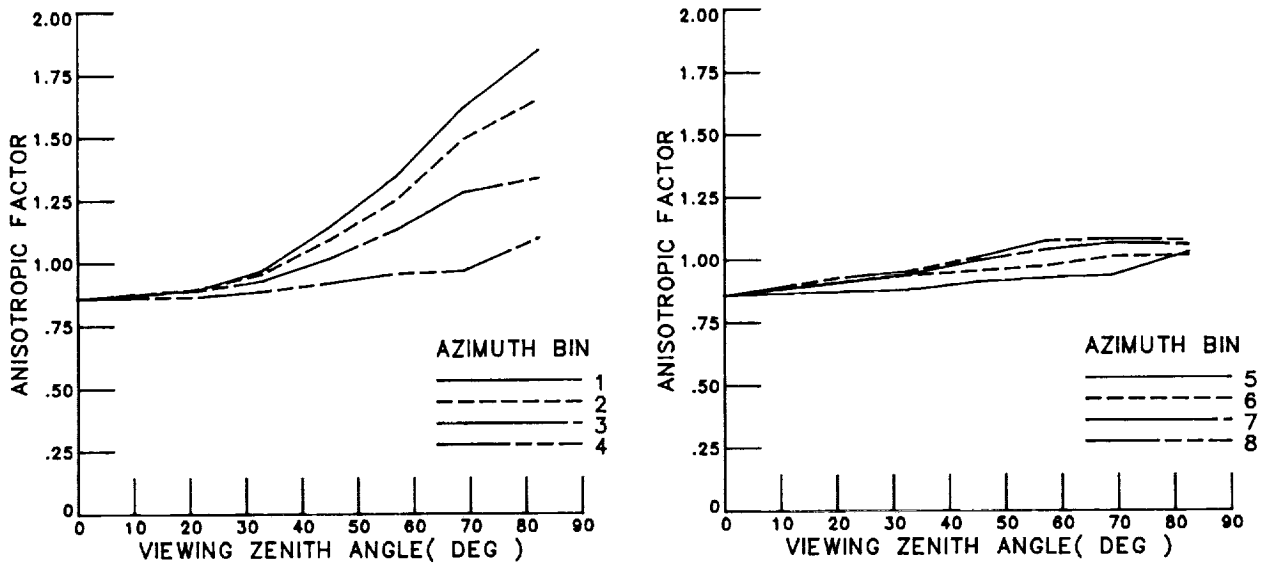
Figure 18. Continued.

SCENE TYPE : OVERCAST
DATA 1 - SW ANISOTROPIC FACTOR
2 - STANDARD DEVIATION OF SW RADIANCES(W/M**2/SR)
3 - CORRELATION OF LW AND SW RADIANCES
( ) - DATA SOURCE

SUN ZENITH : 53.1 - 60.0
MEAN ALBEDO : .5000 (18)
NORMALIZED ALBEDO : 1.1765 (18)

RELATIVE AZIMUTH

BIN NO. / ANGLE(DEG.)		1 0-9	2 9-30	3 30-60	4 60-90	5 90-120	6 120-150	7 150-171	8 171-180
VIEWING ZENITH BIN NO.	ANGLE(DEG.)								
1	0-15	.86 (17)	.86 (17)	.86 (17)	.86 (17)	.86 (17)	.86 (17)	.86 (17)	.86 (17)
		28.9 (17)	28.9 (17)	28.9 (17)	28.9 (17)	28.9 (17)	28.9 (17)	28.9 (17)	28.9 (17)
		-.504 (17)	-.504 (17)	-.504 (17)	-.504 (17)	-.504 (17)	-.504 (17)	-.504 (17)	-.504 (17)
2	15-27	.89 (17)	.89 (17)	.89 (17)	.86 (17)	.87 (17)	.91 (17)	.91 (17)	.93 (17)
		28.8 (17)	29.0 (17)	28.5 (17)	29.3 (17)	28.0 (17)	28.3 (17)	27.1 (17)	26.8 (17)
		-.496 (17)	-.506 (17)	-.472 (17)	-.473 (17)	-.448 (17)	-.387 (17)	-.328 (17)	-.329 (17)
3	27-39	.97 (17)	.95 (17)	.93 (17)	.89 (17)	.88 (17)	.94 (17)	.94 (17)	.95 (17)
		28.5 (17)	28.3 (17)	27.1 (17)	27.8 (17)	27.5 (17)	26.9 (17)	26.9 (17)	27.0 (17)
		-.488 (17)	-.482 (17)	-.491 (17)	-.516 (17)	-.441 (17)	-.362 (17)	-.292 (17)	-.236 (17)
4	39-51	1.14 (17)	1.09 (17)	1.02 (17)	.92 (17)	.91 (17)	.96 (17)	1.00 (17)	1.01 (17)
		28.0 (17)	26.8 (17)	28.5 (17)	27.8 (17)	28.4 (17)	26.4 (17)	26.0 (17)	26.8 (17)
		-.505 (17)	-.437 (17)	-.517 (17)	-.545 (17)	-.442 (17)	-.289 (17)	-.194 (17)	-.250 (17)
5	51-63	1.34 (17)	1.25 (17)	1.13 (17)	.96 (17)	.93 (17)	.97 (17)	1.04 (17)	1.07 (17)
		28.3 (17)	26.8 (17)	27.2 (17)	28.1 (17)	27.0 (17)	25.8 (17)	23.2 (17)	24.3 (17)
		-.314 (17)	-.235 (17)	-.395 (17)	-.556 (17)	-.495 (17)	-.241 (17)	-.169 (17)	-.060 (17)
6	63-75	1.62 (17)	1.49 (17)	1.28 (17)	.97 (17)	.94 (17)	1.01 (17)	1.07 (17)	1.08 (17)
		31.1 (17)	29.4 (17)	28.4 (17)	26.3 (17)	26.5 (17)	25.3 (17)	21.7 (17)	21.4 (17)
		-.071 (17)	-.114 (17)	-.386 (17)	-.603 (17)	-.548 (17)	-.240 (17)	-.085 (17)	-.123 (17)
7	75-90	1.89 (17)	1.65 (17)	1.34 (17)	1.10 (17)	1.03 (17)	1.02 (17)	1.06 (17)	1.08 (17)
		31.1 (17)	30.0 (17)	29.8 (17)	27.7 (17)	25.5 (17)	22.0 (17)	20.2 (17)	20.6 (17)
		.109 (17)	-.064 (17)	-.327 (17)	-.427 (17)	-.361 (17)	-.097 (17)	-.104 (17)	-.138 (17)



(e) Solar-zenith-angle bin 5, 53.13° to 60.00°.

Figure 18. Continued.

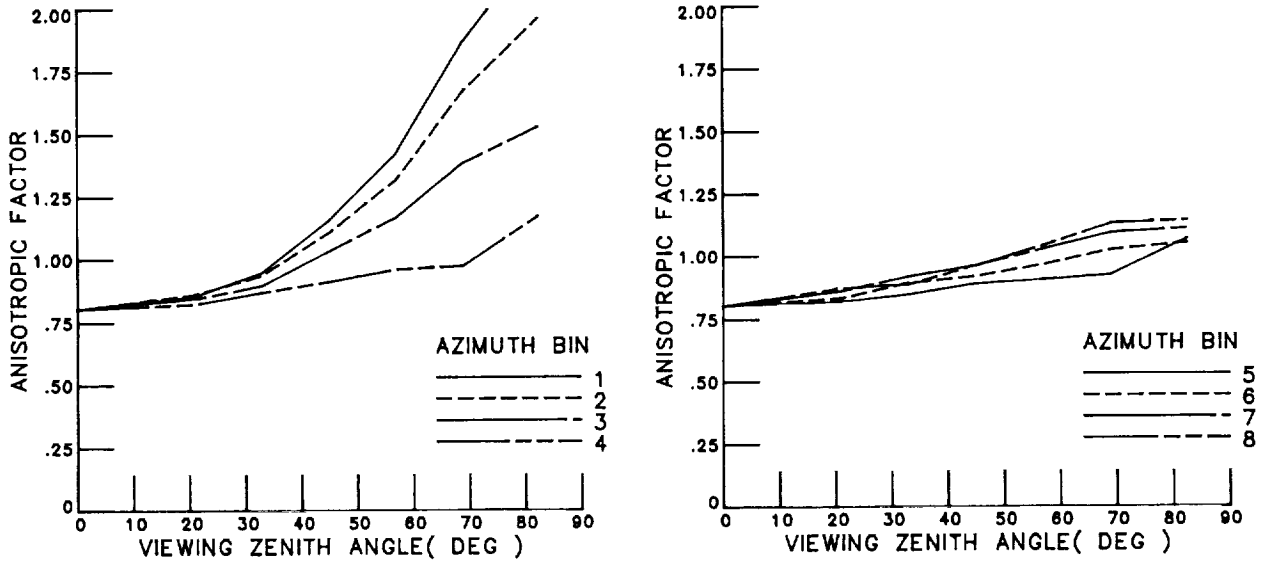
ORIGINAL PAGE IS
OF POOR QUALITY

SCENE TYPE : OVERCAST
DATA 1 - SW ANISOTROPIC FACTOR
2 - STANDARD DEVIATION OF SW RADIANCES(W/M**2/SR)
3 - CORRELATION OF LW AND SW RADIANCES
( ) - DATA SOURCE

SUN ZENITH : 60.0 - 66.4
MEAN ALBEDO : .5300 (18)
NORMALIZED ALBEDO : 1.2471 (18)

RELATIVE AZIMUTH

BIN NO. / VIEWING ZENITH ANGLE(DEG.)		1 0-9	2 9-30	3 30-60	4 60-90	5 90-120	6 120-150	7 150-171	8 171-180
1	0-15	.80 (17)	.80 (17)	.80 (17)	.80 (17)	.80 (17)	.80 (17)	.80 (17)	.80 (17)
		22.3 (17)	22.3 (17)	22.3 (17)	22.3 (17)	22.3 (17)	22.3 (17)	22.3 (17)	22.3 (17)
		-.500 (17)	-.500 (17)	-.500 (17)	-.500 (17)	-.500 (17)	-.500 (17)	-.500 (17)	-.500 (17)
2	15-27	.86 (17)	.86 (17)	.85 (17)	.82 (17)	.82 (17)	.84 (17)	.86 (17)	.87 (17)
		23.0 (17)	22.4 (17)	22.2 (17)	22.1 (17)	21.8 (17)	21.7 (17)	21.1 (17)	21.5 (17)
		-.519 (17)	-.536 (17)	-.507 (17)	-.511 (17)	-.493 (17)	-.436 (17)	-.421 (17)	-.402 (17)
3	27-39	.95 (17)	.94 (17)	.90 (17)	.87 (17)	.85 (17)	.89 (17)	.92 (17)	.89 (17)
		20.7 (17)	22.5 (17)	21.6 (17)	20.6 (17)	21.6 (17)	20.5 (17)	20.3 (17)	20.7 (17)
		-.340 (17)	-.518 (17)	-.523 (17)	-.569 (17)	-.525 (17)	-.383 (17)	-.308 (17)	-.340 (17)
4	39-51	1.15 (17)	1.11 (17)	1.03 (17)	.91 (17)	.85 (17)	.92 (17)	.96 (17)	.96 (17)
		20.6 (17)	21.5 (17)	22.6 (17)	21.5 (17)	21.3 (17)	20.7 (17)	19.5 (17)	20.9 (17)
		-.357 (17)	-.413 (17)	-.463 (17)	-.514 (17)	-.523 (17)	-.372 (17)	-.221 (17)	-.234 (17)
5	51-63	1.42 (17)	1.32 (17)	1.17 (17)	.96 (17)	.91 (17)	.97 (17)	1.03 (17)	1.04 (17)
		21.9 (17)	21.5 (17)	23.0 (17)	22.3 (17)	21.7 (17)	20.5 (17)	18.3 (17)	19.9 (17)
		-.099 (17)	-.237 (17)	-.396 (17)	-.566 (17)	-.537 (17)	-.266 (17)	-.168 (17)	-.145 (17)
6	63-75	1.67 (17)	1.67 (17)	1.39 (17)	.97 (17)	.93 (17)	1.02 (17)	1.09 (17)	1.13 (17)
		31.9 (17)	29.0 (17)	26.9 (17)	23.3 (17)	22.3 (17)	19.7 (17)	17.8 (17)	18.5 (17)
		.111 (17)	-.074 (17)	-.237 (17)	-.567 (17)	-.601 (17)	-.282 (17)	-.077 (17)	.020 (17)
7	75-90	2.25 (17)	1.96 (17)	1.53 (17)	1.17 (17)	1.07 (17)	1.05 (17)	1.11 (17)	1.14 (17)
		39.6 (17)	33.5 (17)	29.5 (17)	24.4 (17)	21.9 (17)	17.6 (17)	16.8 (17)	17.6 (17)
		.186 (17)	.101 (17)	-.245 (17)	-.390 (17)	-.391 (17)	-.149 (17)	-.077 (17)	-.014 (17)



(f) Solar-zenith-angle bin 6, 60.00° to 66.42°.

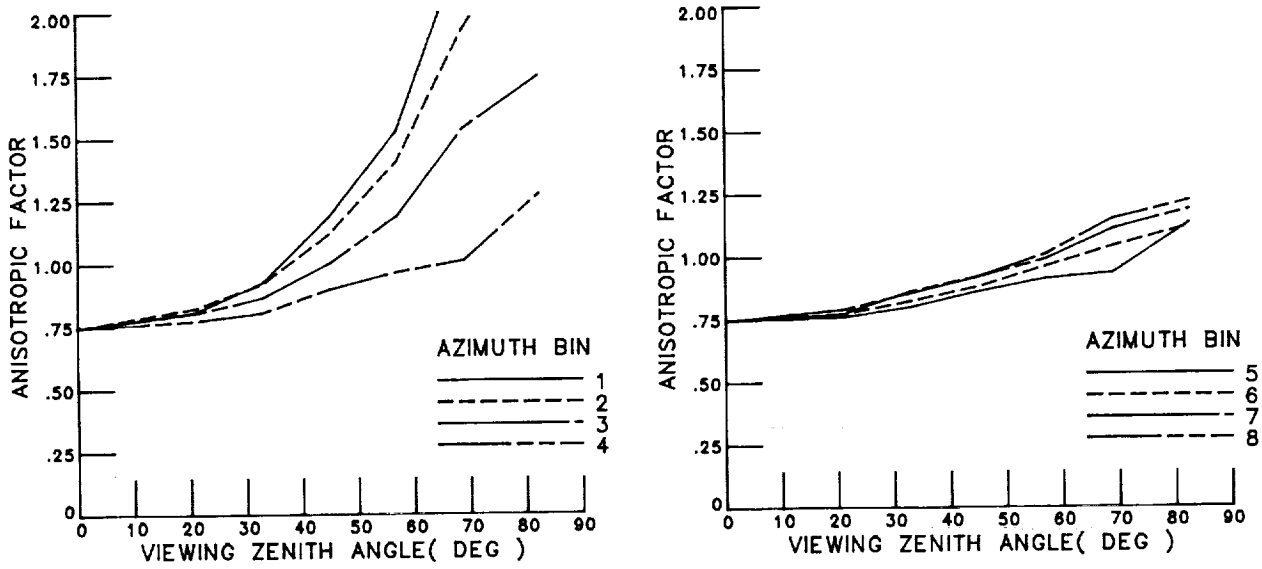
Figure 18. Continued.

SCENE TYPE : OVERCAST
DATA 1 - SW ANISOTROPIC FACTOR
2 - STANDARD DEVIATION OF SW RADIANCES(W/M**2/SR)
3 - CORRELATION OF LW AND SW RADIANCES
( ) - DATA SOURCE

SUN ZENITH : 66.4 - 72.5
MEAN ALBEDO : .5600 (18)
NORMALIZED ALBEDO : 1.3176 (18)

RELATIVE AZIMUTH

BIN NO. / ANGLE(DEG.)		1 0-9	2 9-30	3 30-60	4 60-90	5 90-120	6 120-150	7 150-171	8 171-180
VIEWING ZENITH BIN NO.	ANGLE(DEG.)								
1	0-15	.75 (17)	.75 (17)	.75 (17)	.75 (17)	.75 (17)	.75 (17)	.75 (17)	.75 (17)
		16.4 (17)	16.4 (17)	16.4 (17)	16.4 (17)	16.4 (17)	16.4 (17)	16.4 (17)	16.4 (17)
		-.530 (17)	-.530 (17)	-.530 (17)	-.530 (17)	-.530 (17)	-.530 (17)	-.530 (17)	-.530 (17)
2	15-27	.81 (17)	.82 (17)	.80 (17)	.77 (17)	.76 (17)	.77 (17)	.79 (17)	.77 (17)
		15.7 (17)	15.9 (17)	15.4 (17)	15.7 (17)	15.3 (17)	15.3 (17)	15.3 (17)	16.0 (17)
		-.522 (17)	-.558 (17)	-.529 (17)	-.559 (17)	-.485 (17)	-.488 (17)	-.418 (17)	-.430 (17)
3	27-39	.92 (17)	.92 (17)	.86 (17)	.80 (17)	.80 (17)	.82 (17)	.85 (17)	.86 (17)
		15.5 (17)	15.7 (17)	15.5 (17)	15.3 (17)	15.6 (17)	14.2 (17)	15.2 (17)	15.1 (17)
		-.509 (17)	-.474 (17)	-.538 (17)	-.553 (17)	-.551 (17)	-.396 (17)	-.316 (17)	-.273 (17)
4	39-51	1.19 (17)	1.12 (17)	1.00 (17)	.90 (17)	.86 (17)	.88 (17)	.92 (17)	.92 (17)
		17.1 (17)	15.8 (17)	16.9 (17)	15.8 (17)	15.1 (17)	14.8 (17)	14.0 (17)	14.0 (17)
		-.344 (17)	-.300 (17)	-.487 (17)	-.569 (17)	-.553 (17)	-.399 (17)	-.205 (17)	-.224 (17)
5	51-63	1.52 (17)	1.40 (17)	1.19 (17)	.96 (17)	.91 (17)	.96 (17)	.99 (17)	1.01 (17)
		21.5 (17)	18.2 (17)	19.3 (17)	16.0 (17)	15.3 (17)	14.2 (17)	13.7 (17)	13.4 (17)
		-.076 (17)	-.031 (17)	-.388 (17)	-.577 (17)	-.604 (17)	-.283 (17)	-.147 (17)	-.107 (17)
6	63-75	2.25 (17)	1.93 (17)	1.54 (17)	1.01 (17)	.93 (17)	1.04 (17)	1.11 (17)	1.15 (17)
		34.6 (17)	30.3 (17)	23.3 (17)	16.6 (17)	15.5 (17)	14.1 (17)	13.5 (17)	14.8 (17)
		.032 (17)	.050 (17)	-.181 (17)	-.624 (17)	-.611 (17)	-.215 (17)	-.099 (17)	.034 (17)
7	75-90	2.91 (17)	2.39 (17)	1.74 (17)	1.27 (17)	1.13 (17)	1.12 (17)	1.19 (17)	1.22 (17)
		47.1 (17)	37.1 (17)	26.4 (17)	19.3 (17)	16.5 (17)	12.9 (17)	12.4 (17)	13.1 (17)
		.130 (17)	.021 (17)	-.126 (17)	-.367 (17)	-.353 (17)	-.079 (17)	-.078 (17)	.125 (17)



(g) Solar-zenith-angle bin 7, 66.42° to 72.54°.

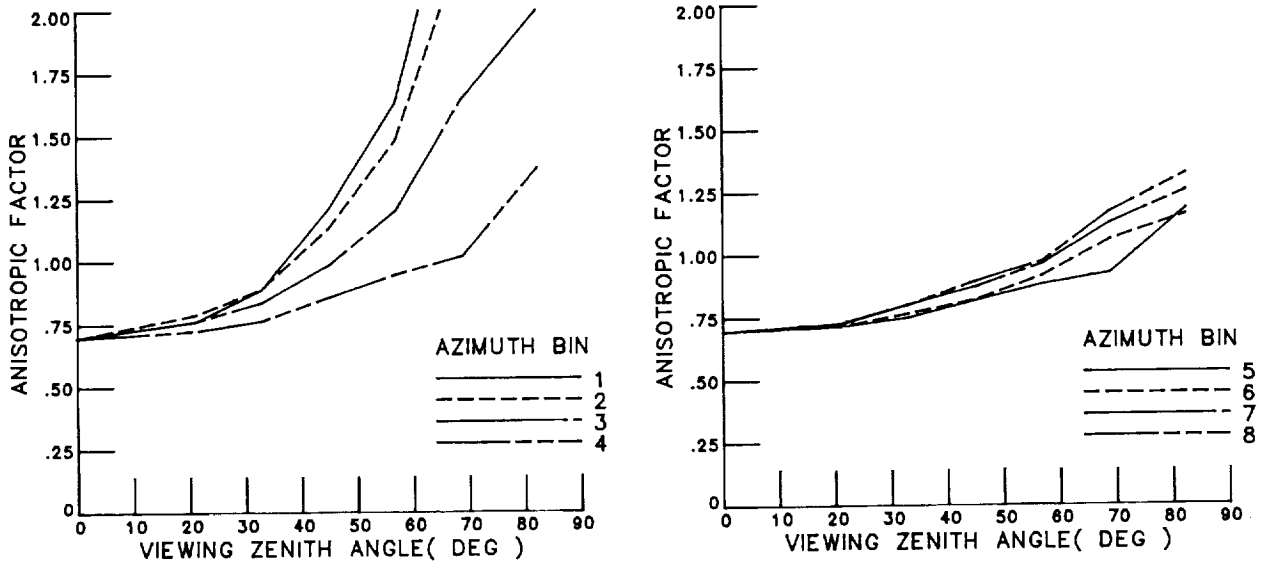
Figure 18. Continued.

SCENE TYPE : OVERCAST
DATA 1 - SW ANISOTROPIC FACTOR
2 - STANDARD DEVIATION OF SW RADIANCES(W/M**2/SR)
3 - CORRELATION OF LW AND SW RADIANCES
( ) - DATA SOURCE

SUN ZENITH : 72.5 - 78.5
MEAN ALBEDO : .5900 (18)
NORMALIZED ALBEDO : 1.3682 (18)

RELATIVE AZIMUTH

BIN NO. / ANGLE(DEG.)	1 0-9	2 9-30	3 30-60	4 60-90	5 90-120	6 120-150	7 150-171	8 171-180
VIEWING ZENITH BIN NO. / ANGLE(DEG.)								
1 0-15	.70 (17)	.70 (17)	.70 (17)	.70 (17)	.70 (17)	.70 (17)	.70 (17)	.70 (17)
	9.9 (17)	9.9 (17)	9.9 (17)	9.9 (17)	9.9 (17)	9.9 (17)	9.9 (17)	9.9 (17)
	-.543 (17)	-.543 (17)	-.543 (17)	-.543 (17)	-.543 (17)	-.543 (17)	-.543 (17)	-.543 (17)
2 15-27	.76 (17)	.79 (17)	.76 (17)	.72 (17)	.72 (17)	.72 (17)	.73 (17)	.73 (17)
	10.1 (17)	9.5 (17)	10.1 (17)	10.0 (17)	10.2 (17)	9.8 (17)	9.1 (17)	9.5 (17)
	-.521 (17)	-.549 (17)	-.557 (17)	-.589 (17)	-.570 (17)	-.535 (17)	-.466 (17)	-.456 (17)
3 27-39	.89 (17)	.89 (17)	.84 (17)	.76 (17)	.75 (17)	.77 (17)	.80 (17)	.80 (17)
	10.4 (17)	10.2 (17)	10.3 (17)	10.1 (17)	9.7 (17)	9.5 (17)	8.9 (17)	7.9 (17)
	-.441 (17)	-.502 (17)	-.536 (17)	-.532 (17)	-.546 (17)	-.488 (17)	-.308 (17)	-.158 (17)
4 39-51	1.21 (17)	1.13 (17)	.99 (17)	.86 (17)	.82 (17)	.82 (17)	.87 (17)	.89 (17)
	10.8 (17)	11.3 (17)	11.5 (17)	10.1 (17)	9.6 (17)	9.3 (17)	8.6 (17)	8.7 (17)
	-.241 (17)	-.281 (17)	-.444 (17)	-.553 (17)	-.593 (17)	-.377 (17)	-.160 (17)	-.145 (17)
5 51-63	1.63 (17)	1.48 (17)	1.20 (17)	.95 (17)	.88 (17)	.92 (17)	.96 (17)	.97 (17)
	17.0 (17)	14.7 (17)	13.8 (17)	10.7 (17)	9.4 (17)	9.2 (17)	8.7 (17)	8.5 (17)
	.022 (17)	-.085 (17)	-.257 (17)	-.545 (17)	-.562 (17)	-.287 (17)	-.130 (17)	-.147 (17)
6 63-75	2.64 (17)	2.23 (17)	1.65 (17)	1.02 (17)	.93 (17)	1.06 (17)	1.13 (17)	1.17 (17)
	41.8 (17)	31.6 (17)	21.0 (17)	11.1 (17)	9.6 (17)	9.5 (17)	9.3 (17)	10.6 (17)
	-.057 (17)	.048 (17)	-.099 (17)	-.554 (17)	-.562 (17)	-.110 (17)	-.053 (17)	.095 (17)
7 75-90	4.00 (17)	2.94 (17)	2.00 (17)	1.37 (17)	1.16 (17)	1.16 (17)	1.26 (17)	1.32 (17)
	53.0 (17)	38.2 (17)	25.1 (17)	15.5 (17)	12.2 (17)	9.5 (17)	9.6 (17)	11.2 (17)
	-.192 (17)	.023 (17)	-.011 (17)	-.267 (17)	-.256 (17)	.082 (17)	.094 (17)	.230 (17)



(h) Solar-zenith-angle bin 8, 72.54° to 78.46°.

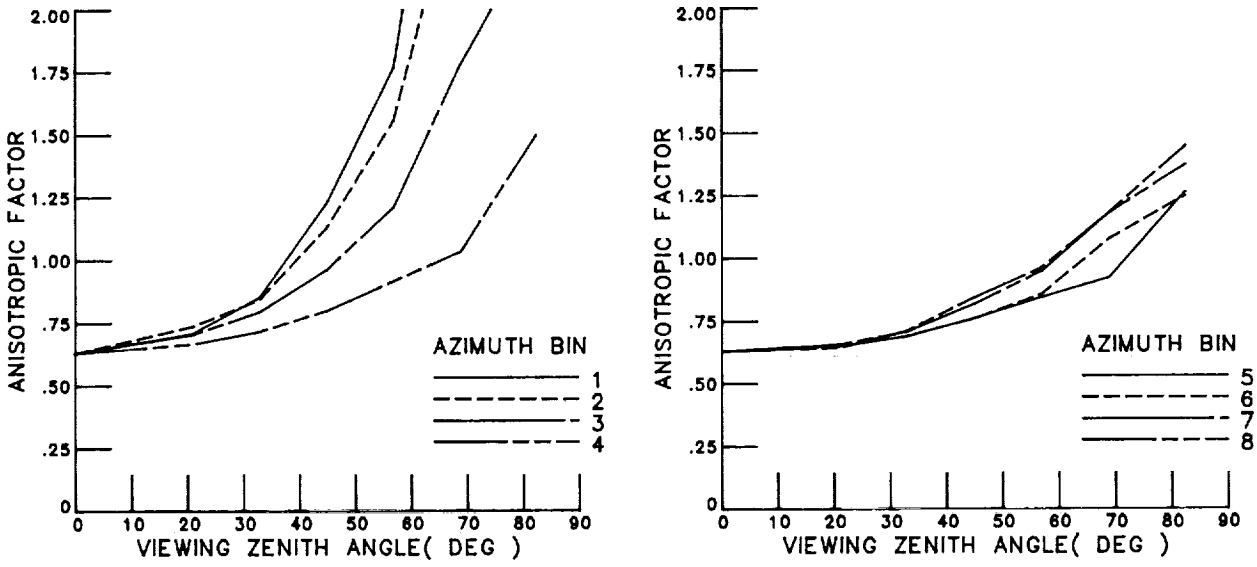
Figure 18. Continued.

SCENE TYPE : OVERCAST
DATA 1 - SW ANISOTROPIC FACTOR
2 - STANDARD DEVIATION OF SW RADIANCES(W/M**2/SR)
3 - CORRELATION OF LW AND SW RADIANCES
( ) - DATA SOURCE

SUN ZENITH : 78.5 - 84.3
MEAN ALBEDO : .6200 (18)
NORMALIZED ALBEDO : 1.4588 (18)

RELATIVE AZIMUTH

BIN NO. / ANGLE(DEG.)		1 0-9	2 9-30	3 30-60	4 60-90	5 90-120	6 120-150	7 150-171	8 171-180
VIEWING ZENITH BIN NO.	ANGLE(DEG.)								
1	0-15	.63 (17)	.63 (17)	.63 (17)	.63 (17)	.63 (17)	.63 (17)	.63 (17)	.63 (17)
		5.7 (17)	5.7 (17)	5.7 (17)	5.7 (17)	5.7 (17)	5.7 (17)	5.7 (17)	5.7 (17)
		-.525 (17)	-.525 (17)	-.525 (17)	-.525 (17)	-.525 (17)	-.525 (17)	-.525 (17)	-.525 (17)
2	15-27	.71 (17)	.74 (17)	.70 (17)	.67 (17)	.65 (17)	.65 (17)	.66 (17)	.64 (17)
		6.0 (17)	5.9 (17)	6.0 (17)	5.8 (17)	5.6 (17)	5.6 (17)	5.7 (17)	5.6 (17)
		-.496 (17)	-.448 (17)	-.488 (17)	-.515 (17)	-.480 (17)	-.455 (17)	-.414 (17)	-.455 (17)
3	27-39	.85 (17)	.84 (17)	.80 (17)	.72 (17)	.69 (17)	.69 (17)	.71 (17)	.71 (17)
		6.4 (17)	5.7 (17)	5.9 (17)	5.4 (17)	5.4 (17)	5.3 (17)	5.7 (17)	5.1 (17)
		-.371 (17)	-.429 (17)	-.450 (17)	-.498 (17)	-.514 (17)	-.431 (17)	-.366 (17)	-.365 (17)
4	39-51	1.22 (17)	1.13 (17)	.96 (17)	.80 (17)	.76 (17)	.76 (17)	.82 (17)	.84 (17)
		8.1 (17)	7.2 (17)	7.1 (17)	6.0 (17)	5.7 (17)	5.4 (17)	5.1 (17)	5.7 (17)
		-.089 (17)	-.220 (17)	-.389 (17)	-.440 (17)	-.495 (17)	-.332 (17)	-.109 (17)	-.089 (17)
5	51-63	1.76 (17)	1.55 (17)	1.21 (17)	.92 (17)	.85 (17)	.86 (17)	.95 (17)	.96 (17)
		13.7 (17)	11.0 (17)	9.3 (17)	6.2 (17)	6.1 (17)	5.6 (17)	5.0 (17)	5.4 (17)
		.046 (17)	.053 (17)	.005 (17)	-.505 (17)	-.404 (17)	-.232 (17)	-.064 (17)	-.005 (17)
6	63-75	3.41 (17)	2.56 (17)	1.78 (17)	1.03 (17)	.92 (17)	1.08 (17)	1.18 (17)	1.18 (17)
		39.5 (17)	27.9 (17)	15.5 (17)	7.1 (17)	5.8 (17)	6.7 (17)	6.6 (17)	7.0 (17)
		-.112 (17)	-.041 (17)	-.111 (17)	-.504 (17)	-.442 (17)	-.031 (17)	.022 (17)	-.038 (17)
7	75-90	5.29 (17)	3.79 (17)	2.32 (17)	1.50 (17)	1.26 (17)	1.25 (17)	1.37 (17)	1.45 (17)
		42.6 (17)	38.0 (17)	20.4 (17)	11.4 (17)	8.4 (17)	6.3 (17)	6.5 (17)	7.4 (17)
		-.272 (17)	-.131 (17)	-.061 (17)	-.246 (17)	-.176 (17)	.160 (17)	.092 (17)	.138 (17)



(i) Solar-zenith-angle bin 9, 78.46° to 84.26°.

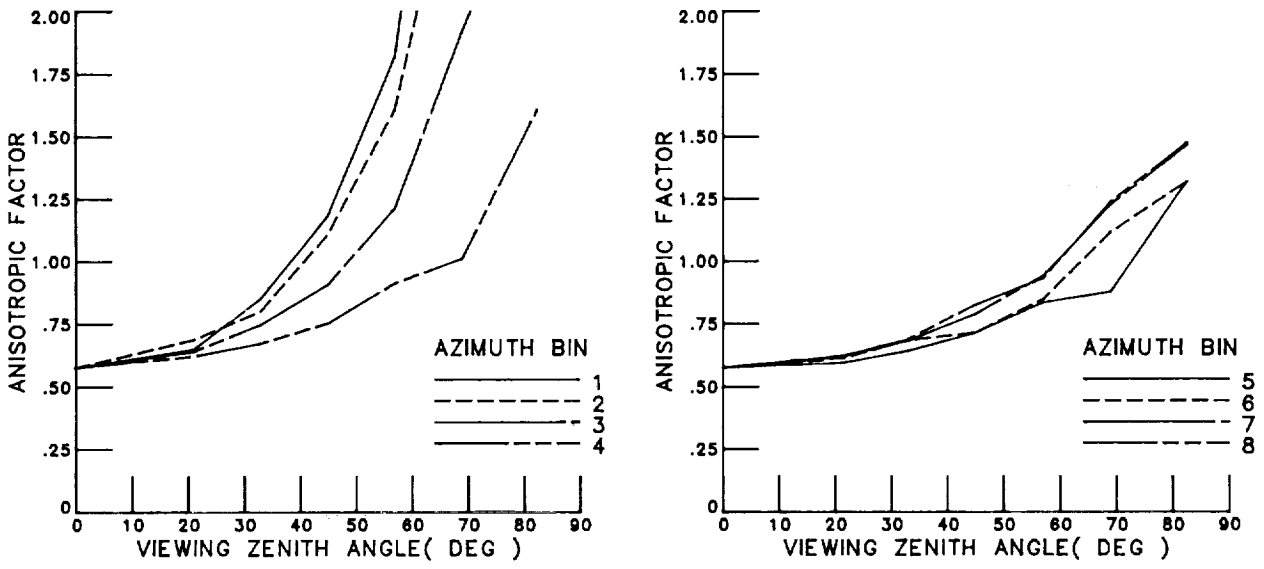
Figure 18. Continued.

SCENE TYPE : OVERCAST
DATA 1 - SW ANISOTROPIC FACTOR
2 - STANDARD DEVIATION OF SW RADIANCES(W/M**2/SR)
3 - CORRELATION OF LW AND SW RADIANCES
( ) - DATA SOURCE

SUN ZENITH : 84.3 - 90.0
MEAN ALBEDO : .6450 (18)
NORMALIZED ALBEDO : 1.5176 (18)

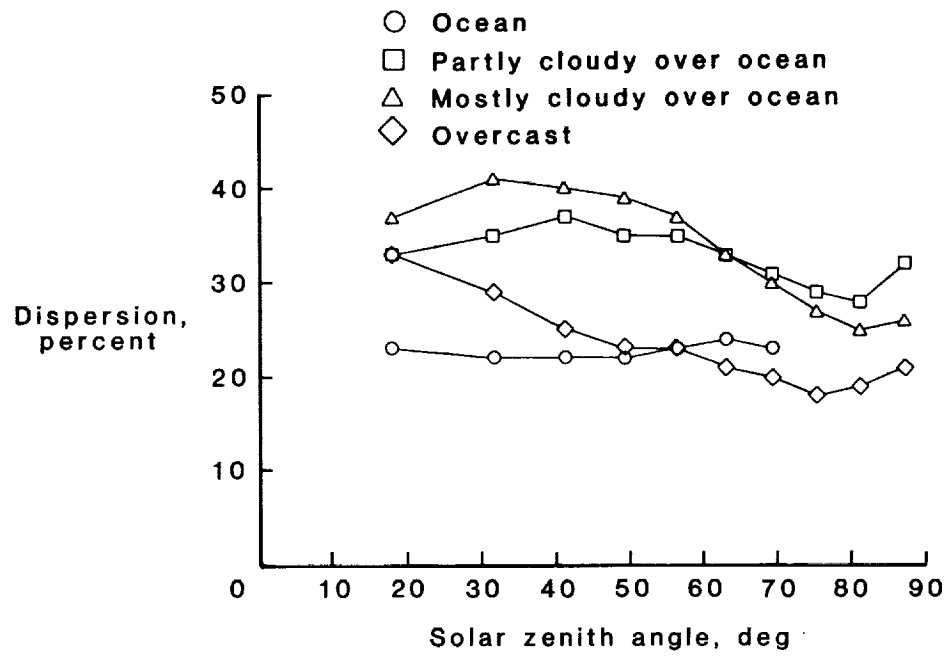
RELATIVE AZIMUTH

BIN NO. / ANGLE(DEG.)		1 0-9	2 9-30	3 30-60	4 60-90	5 90-120	6 120-150	7 150-171	8 171-180
VIEWING ZENITH BIN NO.	ANGLE(DEG.)								
1	0-15	.58 (17)	.58 (17)	.58 (17)	.58 (17)	.58 (17)	.58 (17)	.58 (17)	.58 (17)
		2.0 (17)	2.0 (17)	2.0 (17)	2.0 (17)	2.0 (17)	2.0 (17)	2.0 (17)	2.0 (17)
		-.397 (17)	-.397 (17)	-.397 (17)	-.397 (17)	-.397 (17)	-.397 (17)	-.397 (17)	-.397 (17)
2	15-27	.65 (17)	.69 (17)	.64 (17)	.62 (17)	.59 (17)	.61 (17)	.62 (17)	.62 (17)
		1.9 (17)	2.0 (17)	2.1 (17)	2.2 (17)	2.3 (17)	1.9 (17)	2.1 (17)	2.0 (17)
		-.435 (17)	-.288 (17)	-.328 (17)	-.406 (17)	-.285 (17)	-.287 (17)	-.277 (17)	-.214 (17)
3	27-39	.85 (17)	.80 (17)	.75 (17)	.67 (17)	.64 (17)	.69 (17)	.68 (17)	.69 (17)
		2.6 (17)	2.0 (17)	2.2 (17)	2.0 (17)	1.8 (17)	2.1 (17)	2.2 (17)	1.8 (17)
		.021 (17)	-.125 (17)	-.322 (17)	-.488 (17)	-.214 (17)	-.327 (17)	-.161 (17)	-.220 (17)
4	39-51	1.18 (17)	1.11 (17)	.91 (17)	.75 (17)	.71 (17)	.72 (17)	.79 (17)	.83 (17)
		3.2 (17)	2.7 (17)	2.4 (17)	2.1 (17)	2.0 (17)	1.9 (17)	1.8 (17)	2.0 (17)
		.102 (17)	-.135 (17)	-.153 (17)	-.424 (17)	-.398 (17)	-.304 (17)	-.157 (17)	-.098 (17)
5	51-63	1.62 (17)	1.61 (17)	1.21 (17)	.91 (17)	.83 (17)	.85 (17)	.94 (17)	.93 (17)
		5.0 (17)	4.3 (17)	3.3 (17)	2.5 (17)	2.3 (17)	2.0 (17)	1.9 (17)	1.8 (17)
		.075 (17)	-.071 (17)	.041 (17)	-.240 (17)	-.358 (17)	-.076 (17)	.177 (17)	-.148 (17)
6	63-75	3.71 (17)	2.76 (17)	1.92 (17)	1.01 (17)	.88 (17)	1.12 (17)	1.23 (17)	1.24 (17)
		17.0 (17)	10.0 (17)	7.2 (17)	2.5 (17)	3.0 (17)	2.7 (17)	2.7 (17)	2.9 (17)
		-.346 (17)	-.172 (17)	.105 (17)	-.418 (17)	-.280 (17)	-.032 (17)	-.027 (17)	-.018 (17)
7	75-90	6.17 (17)	4.38 (17)	2.65 (17)	1.61 (17)	1.32 (17)	1.32 (17)	1.47 (17)	1.48 (17)
		22.6 (17)	15.4 (17)	8.3 (17)	4.4 (17)	3.8 (17)	2.7 (17)	2.8 (17)	2.5 (17)
		-.289 (17)	-.199 (17)	.240 (17)	-.083 (17)	-.008 (17)	.276 (17)	-.100 (17)	.026 (17)

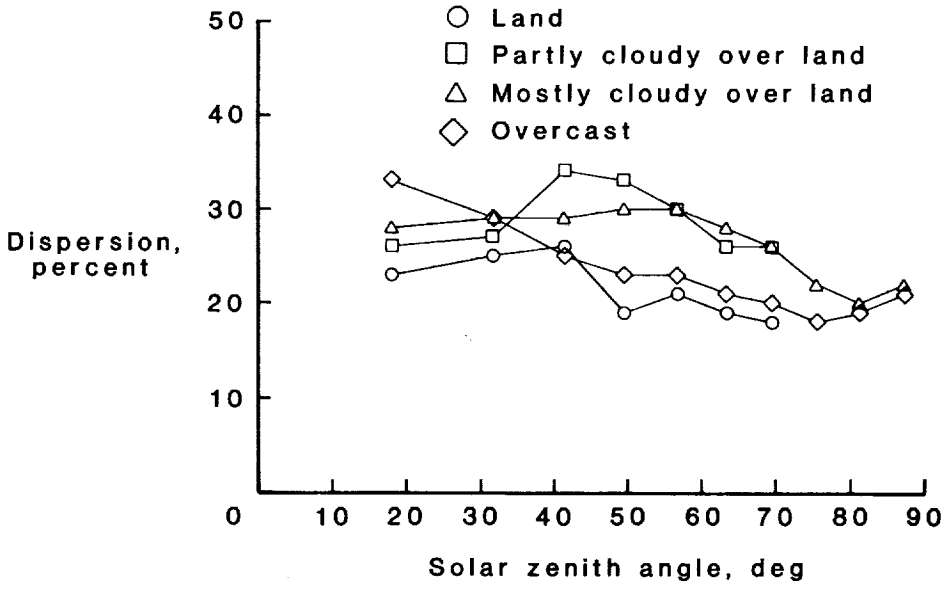


(j) Solar-zenith-angle bin 10, 84.26° to 90.00°.

Figure 18. Concluded.



(a) Ocean scenes.



(b) Land scenes.

Figure 19. Dispersion of shortwave models averaged over all viewing angles.

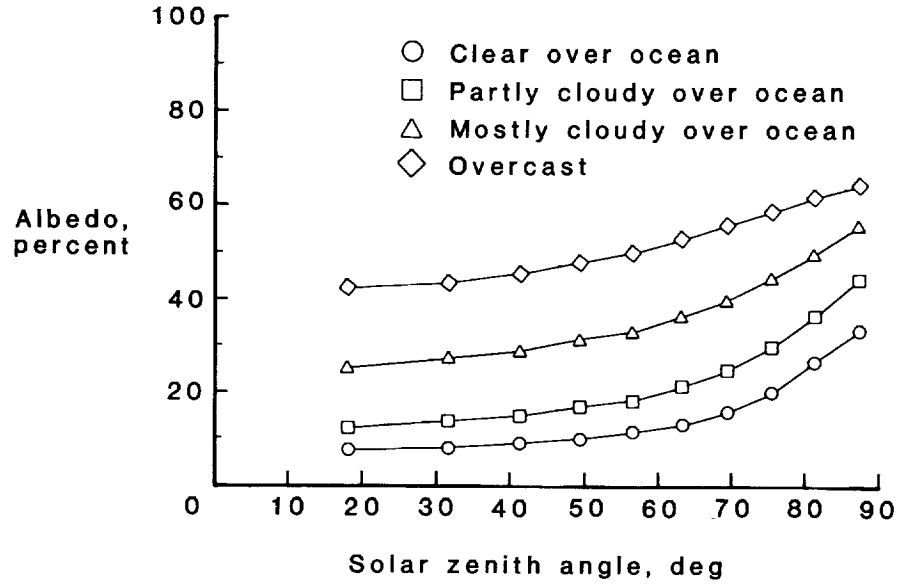


Figure 20. Directional albedos over ocean scenes.

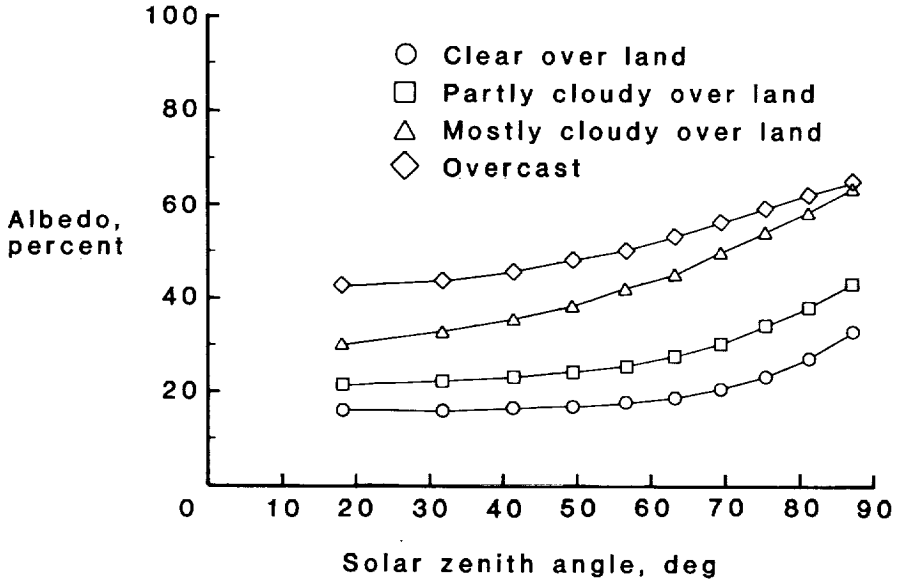


Figure 21. Directional albedos over land scenes.

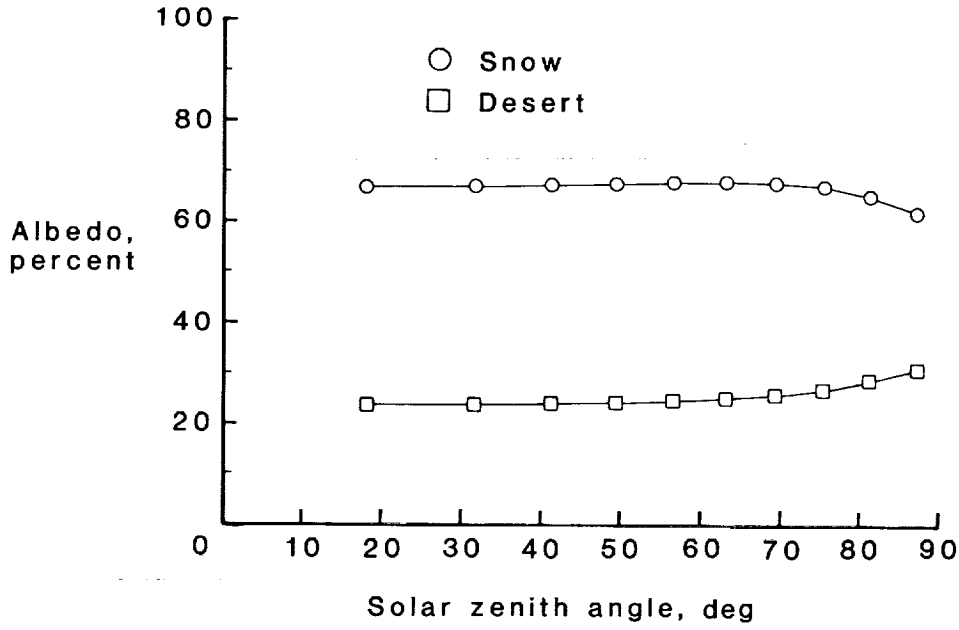


Figure 22. Directional albedos for clear over snow and clear over desert.

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16. Abstract

This document presents the shortwave angular radiation models that are required for analysis of satellite measurements of Earth radiation, such as those from the Earth Radiation Budget Experiment (ERBE). The models consist of both bidirectional and directional parameters. The bidirectional parameters are anisotropic function, standard deviation of mean radiance, and shortwave-longwave radiance correlation coefficient. The directional parameters are mean albedo as a function of Sun zenith angle and mean albedo normalized to overhead Sun. Derivation of these models from the Nimbus 7 ERB (Earth Radiation Budget) and Geostationary Operational Environmental Satellite (GOES) data sets is described. Tabulated values and computer-generated plots are included for the bidirectional and directional models.

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